

Engineering

NOV 28 1921

# AMERICAN ARTISAN and Hardware Record

Vol. 82. No. 22.

620 SOUTH MICHIGAN AVENUE, CHICAGO, NOVEMBER 26, 1921.

\$2.00 Per Year.

## Why—

did the Housing Corporation of the Chamber of Commerce of Pittsburgh, Pa., select the Mahoning, in preference to 26 other makes, for the heating of 2,400 houses when the Mahoning was higher in its bid?



Write for these interesting illustrated booklets NOW.

*Each make was thoroughly tested for results.  
That's where you get the answer.*

The Mahoning gave the best performance. It did best what others did well. It proved to be a good warm air heater in every respect—a heater that would heat homes properly and economically. The Mahoning is a guaranteed warm air heater built in pipe and pipeless types.

The Mahoning and Wright Furnaces have been chosen in big lots by other cities—let us tell you about them. They are also being chosen in big lots by dealers for regular retail trade.

The fact that these heaters are foremost in great housing projects means that they are being sold because of their high quality in spite of the keenest competition.

It means that you can do the same as other Mahoning and Wright dealers—you can get the business with this guaranteed line of warm air heaters—heaters that make good on performance.

Write today and have us send you complete agency details, literature and price list.

## The Mahoning Foundry Company

622 Poland Avenue, Youngstown, Ohio

# MAHONING AND WRIGHT

*Warm Air Heaters  
IN TWO TYPES  
Pipe and Pipeless*

Published weekly, entered as Second-Class Matter June 25, 1885 at the Post Office at Chicago, Illinois, under Act of March 3rd, 1879

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, Pages 39 to 41

## Be Ready to Meet the Big Demand

for these high grade Dangler Wick Oil Stoves.

Look over the complete Dangler line *now*—there's a style and size for every requirement.

*Buy*

# DANGLER

## Wick Oil Stoves

*Now*

Place your orders early—stocks are low everywhere and you want to have your Dangler Oil Stoves on hand when the big demand comes.

### Our Prices Are Low Now

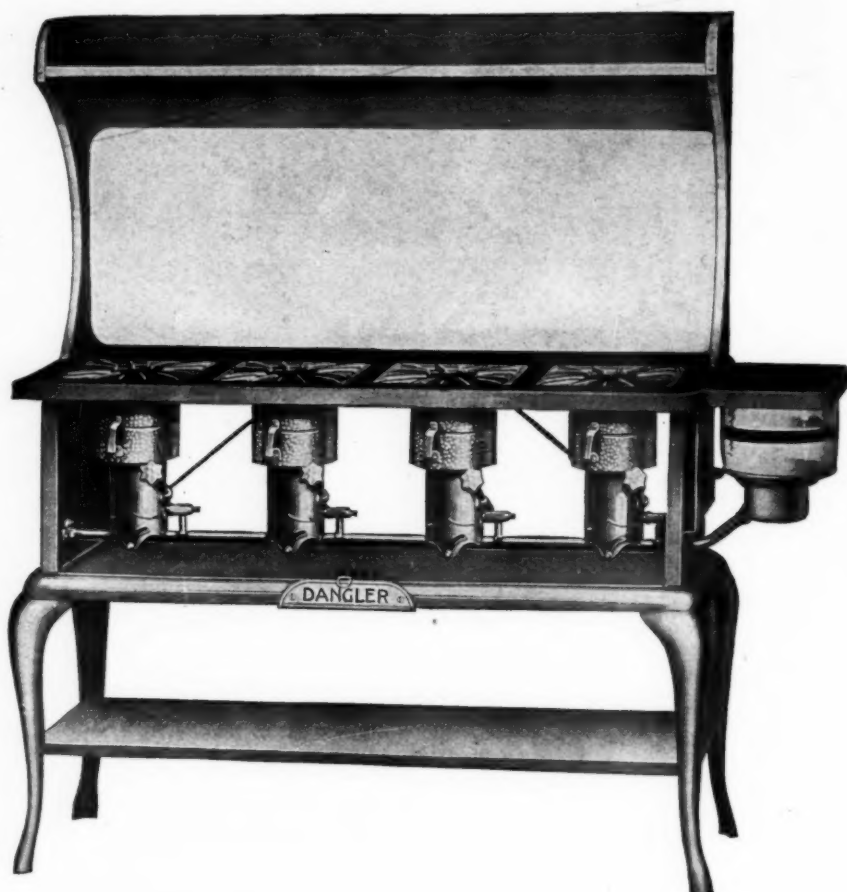
Don't wait—Dangler dealers are buying now—they are preparing for big business and our attractive prices will show you they are right.

Write for catalog showing complete line.

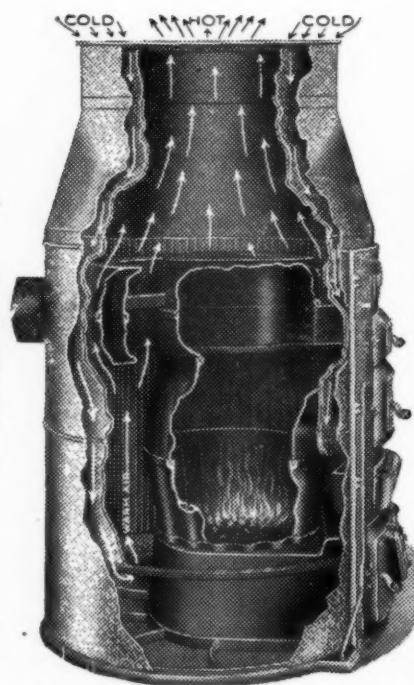
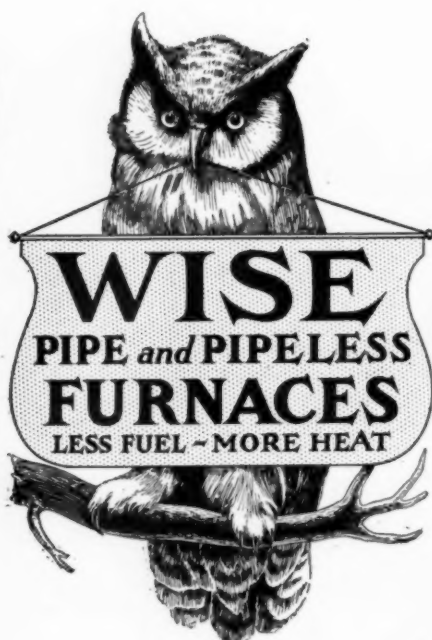
## DANGLER STOVE CO.

Div.—American Stove Co.

CLEVELAND, OHIO



## The Wide Awake Dealer's Choice



*For exclusive territory rights address*

THE WISE FURNACE CO. - - AKRON, OHIO



Founded 1880 by Daniel Stern

Thoroughly Covers  
the Hardware, Stove,  
Sheet Metal, and  
Warm Air Heating and  
Ventilating Interests

# AMERICAN ARTISAN and Hardware Record

Address all communications  
and remittances to  
AMERICAN ARTISAN  
AND  
HARDWARE RECORD  
620 South Michigan Avenue  
Chicago, Illinois

PUBLISHED EVERY SATURDAY BY THE ESTATE OF DANIEL STERN

Eastern Representatives: C. C. Blodgett and W. A. White, 1478 Broadway, New York City

Yearly Subscription Price: United States \$2.00: Canada \$3.00: Foreign \$4.00

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## DOES YOUR PREJUDICE PREVENT YOU FROM RENDERING REAL SERVICE?

Snap judgment is likely to be wrong more often than right.

Man sometimes sets up for himself a certain preconceived opinion as an accepted fact—whether it is a real fact or not—and argues from this, possibly incorrect, basis to a point where his final decision is entirely wrong, with the result that not only he, himself, suffers, but that others who look to him for advice and service are seriously affected.

For example, when the pipeless warm air furnace was first put on the market over-enthusiastic claims were made for it, which had no real foundation in facts.

Pipeless warm air furnaces were placed in homes which were not constructed so as to allow a free circulation, from one room to another, of the heated air.

Some of the rooms could not be heated, or at any rate, the failure of the installer to remedy the possibly faulty installation made it appear that they could not be heated with a pipeless furnace.

The natural outcome of this was that some installers concluded that all pipeless warm air furnaces were failures.

Also that many house owners formed the entirely erroneous conclusion that money spent for a pipeless outfit was so much money wasted.

We have no quarrel with the manufacturers of hot water and steam heating apparatus. But the facts of the case are that they seized upon this situation to boost their own game, and they succeeded in increasing their business to a very large degree by emphasizing unduly the occasional failure of the pipeless warm air furnace to function properly.

Another bad feature of this situation was that some manufacturers found it so difficult to convince the experienced installer of multi-pipe warm air furnaces that their pipeless apparatus really possessed merit, that they concluded to abandon this field of distribution and sold them in more or less considerable quantities through retailers who in many instances knew nothing whatever about installation of any kind of heating apparatus, such as grocers, druggists, garage owners, furniture dealers, etc.

The regular installer of warm air heating apparatus does know something about the principles that govern the distribution of warmed air.

He is the natural channel of distribution for both multi-pipe and pipeless warm air furnaces, and if he allows the fact, that some pipeless jobs were installed in a poor manner, or installed where it was out of the question for them to render satisfactory service, to so warp his judgment that he refuses to sell and install pipeless warm air furnaces, he has only himself to blame if a large portion of the profits which under ordinary circumstances would come to him are diverted to others who have little or no interest in this particular industry.

Failure to render service always results in loss of profits.

More warm air furnaces can be made and installed in the next few years, than have been made since the first warm air furnace was placed on the market, if those who are now making and installing them will get together and put their shoulders to the wheel.

So then—let us all pull together.

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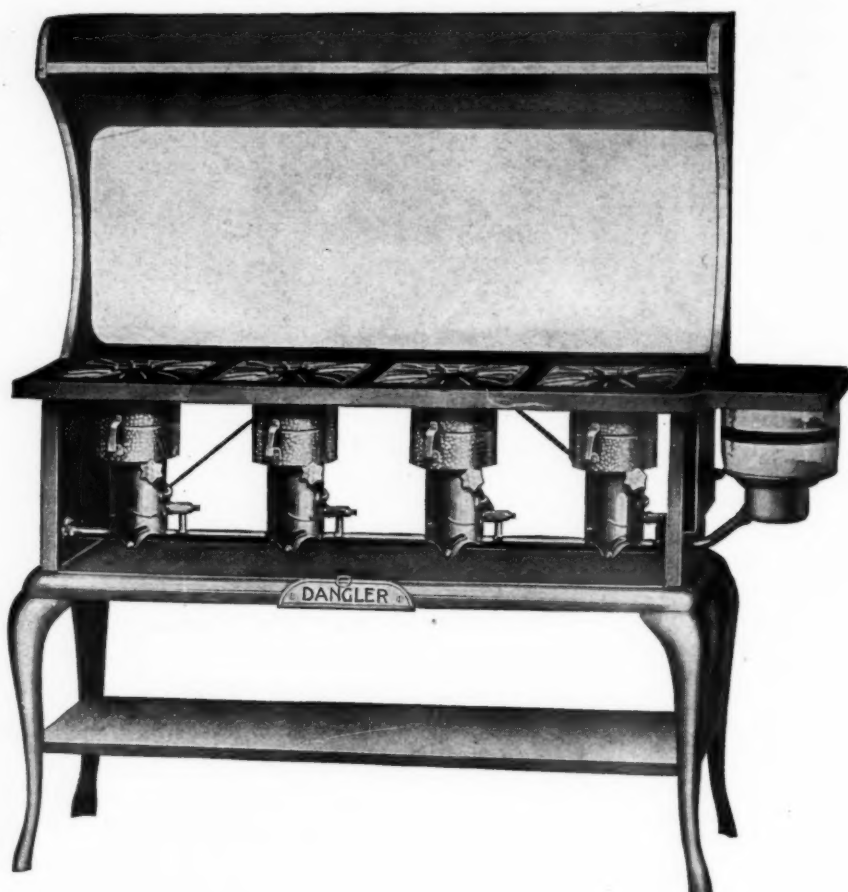
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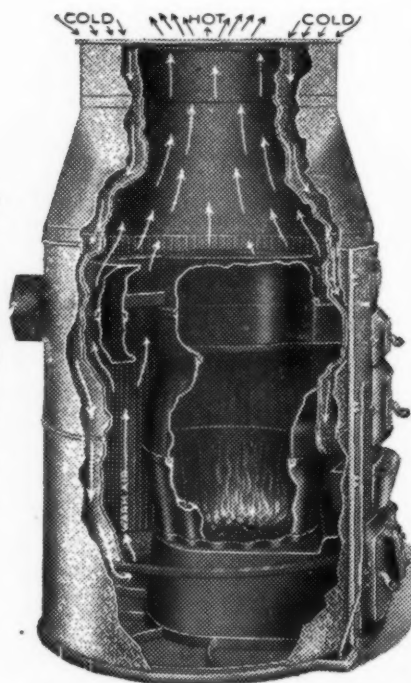
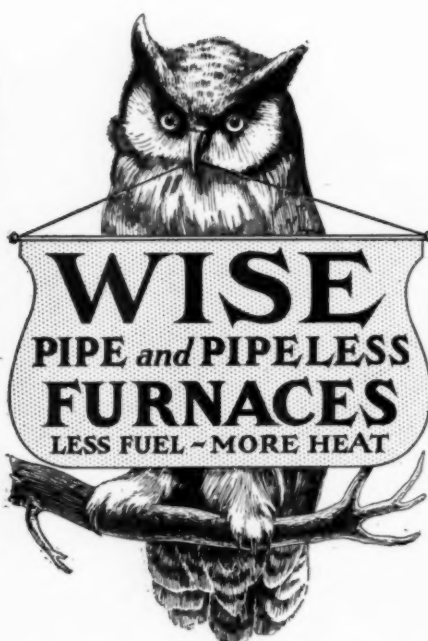
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## Random Notes and Sketches

By Sidney Arnold

A sad, sad story is narrated by Thomas I. ("Premier") Peacock, Grand Rapids, Michigan, sales representative Premier Warm Air Heater Company, Dowagiac, Michigan, as follows:

The sweet young thing had just convinced Mr. Browne that he was the only man she ever loved when her kid brother burst into the room.

"Gimme a quarter, Mr. Browne," he demanded, "and I won't tell the folks about last night."

"What do you mean, Willie?"

"Aw, you know. I peeked through the keyhole and saw you holding sis on your knees."

"But I wasn't here last night."

Thus ended another promising romance.

\* \* \*

There is only one case of justifiable pessimism which has ever come under the notice of Wilbert G. Wise, of Wise Furnace Company, Akron, Ohio. Here it is:

Every member of Smith's family performed on some instrument, which led a neighbor to remark that it must be a source of great pleasure to him. The father made no reply.

"Really," continued the neighbor, "it is remarkable. Your youngest son is a cornetist, both your daughters are pianists and your wife is a violinist. Now what are you?"

"I?" replied the old man. "I am a pessimist."

\* \* \*

To C. G. Schroeter of Schroeter Brothers Hardware Company, St. Louis, Missouri, I am indebted for this amusing tale:

"George, you may bring me two fried eggs, some ham, a pot of coffee, and some rolls," said the man to the waiter.

"Yes, sir."

His companion said: "You may bring me the same. No; just eliminate the eggs."

"Yes, sir."

In a moment the waiter returned.

"Excuse me, sir, but what did you say about them eggs?"

"I merely told you to eliminate them."

"Yes, sir." And he hurried away to the kitchen.

In two minutes he came back once more, leaned confidentially and penitentially over the table and said:

"We had a bad accident this morning, sir, an' the liminator got busted off, right at the handle. Will you take them fried, same as this gentleman?"

\* \* \*

Here is a notice which O. L. Moon of Scheible-Moncrief Heater Company, Cleveland, Ohio, found in a grocery store:

"Provided you get one bad egg from us we will, on your returning it, give you two for it."

\* \* \*

W. D. Sager of Chicago has two main sources of delight. One is selling Danville stoves. The other is puns, deliberate or accidental. He sends me one of the latter kind, thus:

"So you were in the service," ejaculated the pros-

pective father-in-law of the bashful aspirant to his daughter's hand. "Carry any scars?"

"No, sir," replied the would-be bridegroom. "But I've got a pack of cigarettes if you'd like to try one."

\* \* \*

It is said that John J. Schneider of Auto-Wheel Coaster Company, North Tonawanda, New York, has the most careful chauffeur in the state.

Here is how he came to hire him:

"You're a very careful driver?"

"Yes, sir. When I learned to drive there were always three women in the back seat telling me what to do."

\* \* \*

John M. Wallace, president Chicago Retail Hardware Association, says the quickest time he ever heard of is described in this incident:

An Irishman was handling dynamite in a quarry. He let a stick drop and the whole box went up, taking Mike with it. The quarry boss came around later and said to another Irishman:

"Where is Mike?"

"He's gone," replied Pat.

"When will he be back?" asked the boss.

"Well," replied Pat, "if he comes back as fast as he went, he'll be back yesterday."

\* \* \*

With the positive assertion that the affair did not occur in his neighborhood, H. A. Beaman of Indianapolis, Indiana, sales representative of the Haynes-Langenberg Manufacturing Company, St. Louis, Missouri, sends me the following tragic narrative:

Card from a local station agent to a studious citizen:

"Sir—Please send, without delay, for the case of books directed to you, which is lying at this station and is leaking badly."

\* \* \*

This is the way it happens in Michigan, according to E. E. Behler of Grand Rapids, active worker in the Michigan Salesmen's Auxiliary:

The young people enjoying a motor ride and had just entered a country road.

"May I kiss your hand?" he asked, a little confusedly.

She removed her motor veil.

"No," she replied, "I have my gloves on."

\* \* \*

### In Time of Cold.

When the cold days come and you're feelin' sorter blue,  
Just think of what the summer with its fire did to you;  
How you wished for blusterin' winter and the fallin' of the  
snow—  
For all the breezy blizzards around the world to blow!

In the spring the birds were singing—  
Summer was a dream;  
But—"Oh, to meet the blizzard,  
And hear the cold winds scream!"

When the cold days come and you shiver on the way,  
It's "Heaven send the beauty of a blazin' summer day!  
Let the hot sun wilt the corn blades and burn the big world  
dry,  
Till the white heat, like a furnace, cracks the corners of the  
sky!"

And yet when summer gardens  
Gave the rose a crimson gleam,  
'Twas "Oh, to meet the blizzard  
And hear the cold winds scream!"

—Frank L. Stanton.



## You Can Sell Hardware for Cash Now if You Go After the Business.

*Geigel Hardware Company, at Monroe, Wisconsin. Took in Nearly \$1,000.00 in Cash per Day During Recent Sale.*

Monroe, Wisconsin, is a typical county seat town of less than five thousand. There are four good hardware merchants in Monroe, and they think well enough of one another to sit down at the same dinner table once in a while, without coming to blows. If one of them runs short of nails, he telephones to the other three and soon has a couple of kegs of the required size, to tide him over until he can secure a fresh supply from his wholesaler.

They say that in most farming communities there has been and is very little business, because prices on

held a sale of aluminum ware on Friday and Saturday, October 7th and 8th, and cleared out almost every piece of this class of goods he had in stock—over \$500.00 worth, and on Monday, Tuesday and Wednesday of the following week he gave a demonstration sale of Monarch Malleable Ranges, selling over twelve hundred dollars' worth of them, the only extra inducement being a bread and cake cabinet, which was given with each range, sold for cash at the regular price.

A. D. Geigel, of the Geigel Hardware Company, is very enthusiastic about the outlook for business during



Overflow Crowd of Customers Waiting to Be Admitted to Store of Geigel Hardware Company, Monroe, Wisconsin, During Sale Conducted Early in October.

what the farmers produce are so much lower than what they ought to get in order to come out even, that they are not in the mood for spending money. In fact, that the farmers have no money to spend except for the barest necessities.

But evidently this does not hold good in Green County, Wisconsin, for when the Editor of *AMERICAN ARTISAN AND HARDWARE RECORD* was at Monroe, which is the capital of that county, during the second week of October, two retail hardware merchants were able to report that they had gathered in almost a thousand dollars each a day during special sales held just before his arrival.

The Geigel Hardware Company had a general sale beginning Wednesday, October 5th, at 1 p. m., and lasting until Tuesday evening of the following week, the results of which were nearly \$4,500.00 in cash.

Fred Lanz, another hardware merchant in Monroe,

the fall, and he certainly was pleased with the manner in which the people responded to his advertising.

Incidentally, it will be noted that the Geigel store had a few items of aluminum ware to sell, judging from the large advertisement reproduced on the other page, with three others published during the course of the sale.

"We opened the store promptly at 1 p. m., Wednesday, October 5th, and when the store was so full that it was almost impossible to get from one place to the other, there were enough people outside, waiting to be let in, to fill the entire sidewalk in front of our store," said Mr. Geigel, "and the crowds kept coming all afternoon, and the interest kept up during the entire sale."

A picture of the overflow crowd waiting outside to get a chance at the bargains is shown in the accompanying illustration.





notion to buy as they used to before the war.

"Now as to what we did:

"The large advertisement (which is reproduced herewith at the top of the group) was published in our local papers the evening of Tuesday, October 4th. Reprints were made on Manilla board and posted at prominent road corners as well as on the front of our store.

"Small show cards with catchy phrases about the various bargains that we offered were busy in the windows and inside.

"To get the crowd to the store early we offered fifty good corn brooms at one cent each, and it was surely interesting to see how eager all sorts of people were to get one of these brooms.

"Another one-cent item was a good mouse trap. We sold several gross of them.

"The advertisement with the picture of the Court House was published Wednesday evening. Other advertisements, about a quarter newspaper page in size, told about the success of the sale in the Thursday and Friday evening papers.

"Saturday's papers announced the continuance of the sale on Monday and Tuesday of the following week and offered a new list of bargains.

"In Monday's paper we had a card of thanks, entitled 'We kept our word,' in which we expressed our appreciation of the patronage and confidence shown by the large attendance and heavy buying.

"As I said before, we feel that a sale like ours was just what was needed to start our people buying again. They have come to realize that our regular prices are fair and that we are giving them a square deal."

### ***Self Collection Letter Systems Are Open to Suspicion.***

A circular letter from the National Vigilance Committee of the Associated Advertising Clubs of the World, New York City, cautions against the purchase of collection letter outfits without thorough investigation. The letter is as follows:

It has been brought to our attention that a number of so-called collection agencies, systems, or associations are advertising in the "Salesmen Wanted" and "Business Opportunity" columns of newspapers and magazines. The following is a representative piece of their copy:

Agents—\$25 to \$100 per day—Salesmen selling absolute necessity to merchants and professional men. 525% profit. Big weekly repeater. To ambitious men and women this means \$10,000—\$50,000 yearly. Send dime to cover mailing. Outfit free.

The earning claims in the classified advertisements appear exaggerated and are objectionable in themselves but a more serious consideration arises from the manner in which these systems operate.

The salesmen purchase the systems for prices ranging from one to two dollars and resell them to merchants for five or six dollars thus pocketing an exorbitant profit on each transaction.

We understand that the systems are composed of a series of collection letters for delinquent accounts. It is said that merchants fill in and mail the letters mak-

ing it appear that the communications come direct from the collection agency office whereas the so-called agency has nothing to do with them after they are sold to the merchant.

This is, of course, a misrepresentation of facts and we believe savors of duress, besides appearing to be a species of false pretense.

The Committee is of the opinion that it is not only a violation of the law, but that a debtor could set up a valid defense against the account if the matter was pressed to a suit.

Merchants desiring to protect the Good Will of their businesses should be warned against this questionable method of collecting delinquent accounts.

Publications are given these facts so they may be fully informed concerning a practice of confidence destroying character.

### ***Indiana Hardware Man Reaches End of Life's Journey.***

A life of usefulness and service to his community came to an end November 21st with the passing away of Charles W. Fryberger, at his home, 4830 East Washington Street, Indianapolis, Indiana.

Mr. Fryberger was fifty-four years of age at the time of his demise and had resided in Indianapolis for twenty-eight years.

He was the owner of the C. W. Fryberger Hardware Company, 2314 East Washington Street, Indianapolis, with which he had been connected for twenty-five years.

He entered the tinning business about five years ago in connection with his hardware business and was associated with Henry A. Eilers.

Mr. Fryberger was a member of Marion lodge, No. 35, F. and A. M.; Capital lodge, No. 124, I. O. O. F., and the Improved Order of Red Men. He was also a member of the National Retail Hardware Association and the Irvington M. E. Church. Mr. Fryberger was born in Pennsylvania.

He is survived by his widow and one daughter, Mrs. E. F. Madinger of Indianapolis.

### ***Edward J. Newey of the Old Guard Plans New Business.***

After having represented Alfred Field and Company of New York City as hardware and cutlery salesman in the southern territory embracing Virginia to Texas south of the Ohio River, for twenty-nine years, Edward J. Newey, charter member of the Old Guard Southern Hardware Salesmen's Association, has resigned his position with that firm.

He intends to go into business January 1, 1922, as manufacturers' representative.

Already he has secured a few good lines. His reputation and achievements in the trade fully warrant the statement that he would make a reliable and efficient representative for any factory line to the hardware jobbing trade.

If a man is too proud to beg and too honest to steal the only thing left for him is to get trusted.

## Building the Store's Reputation Into a Distinctive Institution Brings Largest Measure of Prosperity.

*The R. W. Isaacs Hardware Company, Clayton, New Mexico, Shows a Strong and Pleasing Personality in Its Publicity and Service.*

Even the poorest, shabbiest, dingiest, most backward hardware store imaginable can be changed by the Aladdin-like magic of ambition and study into a place of prosperity.

That's a good text from which to preach a sermon of success to hardware dealers who need it.

The wireless telephone, the airship, the nitrogen lamp, and the wizardry of science are all developments out of the simplest and commonest sources.

In one aspect of the matter, the hardware merchant who evolves a noteworthy institution of service to his community out of a sluggish and listless hardware business is an inventor and scientist.

Such a dealer holds a beacon light to his fellow merchants in the trade.

The good he accomplishes is not measured by the figures in his daily balance at the bank. It can not be estimated solely by the bigness of the volume of his sales nor by the extent and value of his real estate holdings.

It is something bigger and of greater worth than all these things combined. It is the rendering available of human enrichments out of which civilization itself is builded.

These may seem high-sounding phrases in dealing with the brief history and expansion of a hardware store in the small town of Clayton, New Mexico.

Most of us are too strongly inclined to evaluate things commercially by the index numbers of Broadway.

It is because so many retailers have failed to appreciate, or have not had brought to their attention, the significance of the human qualities as motive forces

of success, that they keep going on in the same groove and that they seldom become distinctive influences in their communities.

When Bob Isaacs fell heir to the old-fashioned hardware and implement store in Clayton, New Mexico, his natural impulse was to follow the lines

of least resistance and to maintain the traditions of the establishment.

And so for a while he was content with the ramshackle frame building and its uninviting implements and hardware stock.

A certain amount of business came to him in a natural way almost from force of necessity so that he did not lack for a comfortable income.

It dawned on him suddenly, he says, that Wanamaker and Woolworth and Marshall Field and the conspicuous mercantile establishments of the country could not have become prosperous if they continued to do business in tumble down buildings and with old fashioned methods.

He decided that what was good enough for Marshall Field and Wanamaker and the others, ought to be of advantage to him.

So he decided to modernize his store. He built a fine brick structure with plate

glass show windows, attractive display cards, and equipped it with the best brands in each line of hardware and implements.

Then he proceeded to individualize his store as an institution in the minds of the people.

He adopted a store motto out of which he carefully kept all semblance of exaggeration.

He called his establishment "the house of good service."

Dearest Belinda:

Well, here I am at last. I know that you have been impatient at my delay in not writing you as prompt as I promised, but really I did not want to write a make-believe letter and therefore waited until I had a chance to look over this substantial little city. A more thriving community it would be hard to find.

I went down town last Thursday, and stepped into the corner hardware store. If you can imagine Jones & Browns' only three or four times as large, you will get a faint idea as to the size of R. W. Isaacs Hardware Company's place. I can almost hear you say, My Lands! I wonder what they can handle besides hardware. That I will try and tell you; that is, we will glance over it.

The first things that struck my attention were those beautiful "Hall's Teapots"; they were there in almost every design. The fact that they were so handsome, I shall get one of them to use as a chocolate pot as well as for get one of them to use as a chocolate pot as well as for can Everware and the Wagner cast aluminum. Oh! that Wagner Ware, if ever there was an aristocrat of the kitchen it is that Wagner Ware. Life lasting as far as normal kitchen or household use, it becomes the most economical to buy and use.

They have the Wagner Ware in great variety: round or oblong covered roasters, kettles, sauce pans, square bread pans, skillets, griddles, trays, in fact almost every utensil that can be used in the kitchen.

Among the Christmas presents that I will make this year, will be "Hall's Teapots," and Wagner cast aluminum ware.

Well, I have used up my paper for today, and will tell more in my next.

With dearest love to you, I am,

Sincerely yours,  
KATE.

Remarkably Unusual Advertisement of the R. W. Isaacs Hardware Company, Published in the "Clayton Citizen," Clayton, New Mexico.



Note that word "good." It's a sturdy, believable word without furbelows and ornamental superlatives.

He gave deep thought to the form and manner of his advertising, believing that a store's advertisement should identify it beyond all possibility of confusion and mistakings.

Wherefore, his advertisements have the kind of originality and the warmth of personality which make people look for them in their newspaper.

"Feasting in the Olden Days", when one reads of it, was a sure grand and glorious time, and one can but wonder at the marvelous ability of those cooks with the rude cooking appliances they had then. Suppose those old timers were to come to life just now they sure would wonder at these—

### THANKSGIVING DAY SUGGESTIONS BRIGHT BITS AT BOB'S

Aluminum Roasters.	Cast or Spun.	Savory Roasters.
Food Choppers.		Pyrex Baking Dishes.
	Japanese Hand-Painted China	
Hall Teapots.	Heisey Cut Glass.	
	Beautiful Dinner Sets.	
Congoleum Rugs, 9x9, 9x10, 9x12.		
Linoleum.	Congoleum.	Oil Cloth.
	Six and Eight Foot Wide.	

See our display west half of west window.  
Without question these Hall Teapots are the most beautiful and useful that you ever saw.

**R. W. Isaacs Hdw. Co.**  
HOUSE OF GOOD SERVICE

Advertisement in the Form of a Menu, Published by the R. W. Isaacs Hardware Company in the "Clayton Citizen," Clayton, New Mexico.

Herewith are reproduced two of these advertisements.

One is in the form of a letter. It is set up in plain type without any emphasis of heavy letters anywhere from beginning to end.

It begins with "Dearest Belinda," runs on naturally as a woman would write to a woman friend, and tells about a visit to the R. W. Isaacs Hardware Company store.

In the letter, the R. W. Isaacs Hardware Company contrived to give mention to the particular commodities which it was featuring at the time that this unique advertisement appeared in the *Clayton Citizen*.

Another of the advertisements is shown in reduced size. In the original it occupied a space  $4\frac{1}{4}$  inches by  $7\frac{3}{4}$  inches. It is cleverly arranged in the form

of a menu and consists of Thanksgiving Day suggestions.

At the top of the advertisement is a friendly paragraph comparing the feasting in the olden days of crude cooking utensils with the wonderful cooking of our day, aided by marvelous cooking appliances.

The suggestions in this advertisement are cleverly diversified.

Practically all the advertisements of the R. W. Isaacs Hardware Company are intimately harmonized with the store's window displays. In the majority of the newspaper announcements, reference is made to the things on display in the Company's windows.

Naturally, this intensifies the appeal of the advertisement and reinforces the printed message with the persuasion of the goods themselves on exhibit.

The physical attractiveness of the store, the friendliness and originality of its newspaper advertisements and other forms of publicity, are all concentrated in the spirit of salesmanship which rules in the R. W. Isaacs Hardware Company establishment.

The sales people of the store are not merely employees. They feel that they are identified with the establishment and that its interests are their interests.

In consequence, they look upon its customers as their friends. Their courtesy and helpfulness to the patrons of the store, therefore, are sincere.

Needless to say, the volume of sales is constantly increasing because not only has the R. W. Isaacs Hardware Company developed its business into a distinctive institution with a winning personality, but it has adopted the most progressive methods of trade solicitation in its territory.

### Right to Cancel Contracts Is Very Limited.

There is no right to cancel a valid contract of purchase unless a reservation to that effect is made in the contract says James A. Timothy in the *Purchasing Agent*.

"Substantial breach" gives the right to cancel, but default in part of delivery is not in itself considered a "substantial" breach.

Shipment by seller while buyer is in technical default in payment of installments due may be regarded as a waiver of such default.

Buyers in a falling market often claim that seller was late in delivery, but in order to put the seller in default buyer must give him notice requiring performance within a reasonable time.

If a sales contract is a mere option by one party it may be withdrawn, but not after acceptance.

### Adds a Hardware Store to His Tin Shop.

In order to render a more comprehensive service to his patrons, L. A. Brand, proprietor of the Riverside Sheet Metal Works, Sioux City, Iowa, has added a hardware department to his tin shop.

Riverside is a fast-growing suburb of Sioux City, Iowa, and the enlarged business, to be known as Riverside Hardware Store and Sheet Metal Works, is certain to be appreciated by Mr. Brand's patrons.

# Good Ideas for Window Display

*Practical Lessons from Exhibits in AMERICAN ARTISAN  
AND HARDWARE RECORD Window Display Competition.  
How to Get More Passers-By to Come into Your Store.*

## **WINDOW EXHIBIT OF HOLIDAY GOODS IS BIG SUCCESS.**

The holiday season is a time when people are cudgeling their brains for hints as to appropriate gifts for friends and relations.

Ordinarily, it would not be good merchandising to put so many different things into the window exhibit because a multiplicity of details is more or less confusing to the observer.

But in this case, the people who stop to examine the



Window Exhibit of Holiday Goods Designed and Arranged by L. H. Warde for Duncan and Goodell Company, Worcester, Massachusetts, Awarded Special Honorable Mention in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

The window display shown in the accompanying illustration is intended to offer helpful suggestions in the choice of holiday presents. That is why it presents so large a variety of articles.

window are, in most instances, in search of just such a variety of articles as this window afforded them.

This window display was designed and arranged by L. H. Warde for Duncan and Goodell Company,



Worcester, Massachusetts. It was awarded Special Honorable Mention in **AMERICAN ARTISAN AND HARDWARE RECORD** Window Display Competition.

The exhibit was put in place one week before Christmas. The night before Christmas, it was so nearly empty that it had to be trimmed over. All the salable goods in the window and in the store's stock were almost sold out.

### **Business Men Should Help Stamp Out Tuberculosis.**

Worse than the most deadly gas evolved by chemists during the World War, more destructive than all the devices of militarists, and more insidious than any propaganda against civilization, is the White Plague.

Its attacks never cease. It recognizes no truce or armistice.

And yet it is easier to overcome this ever-present enemy than it was for our soldiers to roll back the tide of German invasion of France.

Tuberculosis can be conquered and wiped out only through cooperation of all the people. The men of



business must take the lead in this great work of saving humanity and conserving the man power of the race.

Every worker who is interested in his job today knows the amount of attention which is given to prevention of waste. But much more is heard of the loss by waste of material than of the far greater loss by waste of man power. The loss of man power can be cut down right now by aiding the work of the National Tuberculosis Association by buying its Christmas seals.

It is obvious that every person whose life is prolonged by the prevention of tuberculosis means increased wealth to the manufacturer and merchant because of the added working capacity of the individual. Nor is prevention a far away and lazy mirage. The fact is that the National Tuberculosis Association, with headquarters at 370 Seventh avenue, New York City, and its 1200 affiliated agencies are fighting a winning war against tuberculosis.

### **Veteran Hardware Merchant Passes Away.**

After more than half a century of activity in the hardware trade, Henry M. Gay, superintendent of the Philip Gross Hardware Company, Milwaukee, Wisconsin, passed away November 16th, at his home in that city.

He was born in Stroud, a suburb of Bristol, Eng-



Henry M. Gay.

land, January 3, 1847, and came with his parents to the United States while still in his infancy.

He attended the public school in Milwaukee until 1857, when he migrated to McGregor, Iowa.

In the latter town he completed his public school education and then returned to Milwaukee where he took a business course in Commercial College.

In 1867 he became a hardware salesman on the road.

Eight years later he associated himself with the Biddle Hardware Company of Philadelphia.

Until 1906 he was connected with various prominent hardware jobbers and manufacturers' agents in Milwaukee and Chicago when he became superintendent of the Philip Gross Hardware Company of Milwaukee, Wisconsin.

He was a member of the Grand Avenue Congregational Church, the Old Settlers' Club, Old School Mates' Club of Milwaukee, and of the Kilbourne Chapter of Wisconsin Lodge, No. 13, and F. and A. M.

He is survived by his widow, two daughters, Addie and Greta, one son, Henry M. Gay, Jr., of Minot, North Dakota; two sisters, Mrs. Etta R. Sheppard, St. Petersburg, Florida, and Mrs. Robert C. Drips, Rochester, New York.

### **Trade Opportunities in Foreign Lands.**

The Bureau of Foreign and Domestic Commerce through its Special Agents, Consular Officers and Commercial Attachés, is receiving information of op-

portunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

323.—A mercantile firm in South Africa desires to purchase agricultural implements, hardware, etc. Catalogues and price lists are requested.

332.—A merchant in Italy desires to purchase or secure an agency for the sale of metals and tools. Correspondence should be in Italian. References.

338.—A merchant in South Africa desires to secure the representation of firms for the sale of general hardware.

339.—A mercantile company in Victoria, Australia, desires to secure agencies for the sale of tin plate, chain tools, wood screws, etc. Quotations should be given c. i. f. Australian ports. References.

## Coming Conventions.

Sheet Metal Products Association, Congress Hotel, Chicago, Illinois, December 8 and 9, 1921. D. C. Jones, Secretary, P. O. Box 769, Chicago, Illinois.

Western Warm Air Furnace and Supply Association, Hotel Savery, Des Moines, Iowa, December 14, 1921. John H. Hussie, Secretary, 2407 Cuming Street, Omaha, Nebraska.

The Western Retail Implement, Vehicle and Hardware Association, Kansas City, Missouri, January 17, 18, 19, 1922. Exhibition at Convention Hall in charge of Louis W. Shouse. Headquarters, Coates House. Sessions in Century Theatre. H. J. Hodge, Secretary, Abilene, Kansas.

Pacific Northwest Hardware and Implement Association Convention, Davenport Hotel, Spokane, Washington, January 17, 18, 19, 20, 1922. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Mountain States Hardware and Implement Dealers' Association, Denver, Colorado, January 24, 25 and 26, 1922. W. M. McAllister, Boulder, Colorado.

Texas Retail Hardware Association, Adolphus Hotel, Dallas, Texas, January 24, 25 and 26, 1922. A. M. Cox, Secretary, 1808 Main Street, Dallas, Texas.

Oregon Retail Hardware and Implement Dealers' Association Convention, Imperial Hotel, Portland, January 24, 25, 26, 27, 1922. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Kentucky Hardware and Implement Association, Jefferson County Armory, Louisville, Kentucky, January 24, 25, 26, and 27, 1922. J. M. Stone, Secretary-Treasurer, Sturgis, Kentucky.

Indiana Retail Hardware Association, Convention and Exhibition, Athenaeum Hall, Indianapolis, January 24, 25, 26, 27, 1922. G. F. Sheely, Secretary, Argos.

Sheet Metal Contractors' Association of Pennsylvania, Hotel Berkshire, Reading, Pennsylvania, January 26 and 27, 1922. W. F. Angermyer, Secretary, 714 Homewood Avenue, Pittsburgh, Pennsylvania.

West Virginia Hardware Association Convention and Exhibition, Wheeling, January 31, February 1, 2, 1922. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Nebraska Retail Hardware Association Convention, Lincoln, January 31 and February 1, 2, and 3, 1922. George H. Dietz, Secretary, 414-417 Little Building, Lincoln, Nebraska.

Michigan Retail Hardware Association Convention and Exhibit, Grand Rapids, Michigan, February 7, 8, 9 and 10, 1922. Karl S. Judson, Exhibit Manager, 248 Morris Avenue, Grand Rapids, Michigan. A. J. Scott, Secretary, Marine City, Michigan.

Oklahoma Hardware and Implement Association Convention and Exhibition, City Auditorium, Oklahoma City, Oklahoma, February 7, 8, 9, and 10, 1922. W. B. Porch, Secretary-Treasurer, Oklahoma City.

Wisconsin Retail Hardware Association Convention and Exhibition, Milwaukee, February 8, 9, 10, 1922. P. J. Jacobs, Secretary, Stevens Point, Wisconsin.

Pennsylvania and Atlantic Seaboard Hardware Association, Inc., Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, February 13, 14, 15, 16, 17, 1922. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh.

California Retail Hardware and Implement Association, San Francisco, California, February 14, 15 and 16, 1922. Le Roy Smith, Secretary, 1112 Market Street, San Francisco, California.

Illinois Retail Hardware Association Convention, Hotel Sherman, Chicago, February 14, 15, 16, 1922. Leon D. Nish, Secretary, Elgin, Illinois.

Minnesota Retail Hardware Association Convention, St. Paul, February 14, 15, 16, 17, 1922. H. O. Roberts, Secretary, 1030 Metropolitan Life Building, Minneapolis, Minnesota.

Ohio Hardware Association Convention and Exhibition, Columbus, February 14, 15, 16, 17, 1922. Headquarters, Deshler Hotel. Exhibition, Memorial Hall. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Iowa Retail Hardware Association Convention and Exhibit, Coliseum, Des Moines, Iowa, February 21, 22, 23, and 24, 1922. A. R. Sale, Secretary-Treasurer, Mason City, Iowa.

Michigan Sheet Metal Contractors Association, Jackson, Michigan, February 21, 22 and 23, 1922. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids, Michigan.

Missouri Retail Hardware Association Convention and Exhibition, St. Louis, Planters Hotel, February 21, 22, 23, 1922. F. X. Becherer, Secretary, 5106 North Broadway, St. Louis, Missouri.

New England Hardware Dealers' Association Convention and Exhibition, Paul Revere Hall, Mechanics' Building, Boston, Massachusetts, February 21, 22, 23, 1922. George A. Fiel, Secretary, 10 High Street, Boston.

Virginia Retail Hardware Association, Roanoke, Virginia, February 21, 22, and 23, 1922. Thomas B. Howell, Secretary, Richmond, Virginia.

South Dakota Retail Hardware Association Convention and Exhibition, Mitchell, South Dakota, February 21, 22, 23 and 24, 1922. H. O. Roberts, Secretary, 1030 Metropolitan Life Building, Minneapolis, Minnesota.

New York State Retail Hardware Association Convention and Exhibition, Rochester, February 21, 22, 23, 24, 1922. Exhibition at Exposition Park. Headquarters and sessions at Powers Hotel. J. B. Foley, Secretary, 412-413 City Bank Building, Syracuse, New York.

Old Guard Southern Hardware Salesmen's Association, New Orleans, Louisiana, April 20, 1921. R. P. Boyd, Secretary-Treasurer, Knoxville, Tennessee.

Southern Hardware Jobbers' Association, New Orleans, Louisiana. Tentative dates, April 19, 20, and 21, 1922. John Donnan, Secretary, Richmond, Virginia.

American Hardware Manufacturers' Association, Spring Meeting, New Orleans, Louisiana, April 19, 20, and 21, 1922. Frederick D. Mitchell, Secretary-Treasurer, 4106 Woolworth Building, New York City.

Southeastern Retail Hardware and Implement Association, Convention and Exhibit, May 9, 10, 11 and 12, 1922, Chattanooga, Tennessee. Walter Harlan, Secretary, 460 St. James Building, Jacksonville, Florida.

Hardware Association of the Carolinas Convention, Winston-Salem, North Carolina, May 17, 18, 19 and 20, 1922. T. W. Dixon, Secretary-Treasurer, Charlotte, North Carolina.

Sheet Metal Contractors' Association of Indiana, Indianapolis, Indiana, May 15, 1922. Ralph R. Reeder, Secretary, 312 East Sixteenth Street, Indianapolis, Indiana.

National Association of Sheet Metal Contractors Convention and exhibition in the Athenaeum, Indianapolis, Indiana, May 16, 17, 18, and 19, 1922. Edwin L. Seabrook, Secretary, 608 Chestnut Street, Philadelphia, Pennsylvania.

Associated Advertising Clubs of the World, Milwaukee, Wisconsin, June 11, 12, 13, 14, and 15, 1922. Carl Hunt, Secretary, 110 West 40th Street, New York City.

## Retail Hardware Doings.

### California.

Henry Myers of Santa Barbara has opened a hardware and sporting goods store at 824 State Street.

### Illinois.

The Meierhoff Hardware Company, 510 Central Avenue, Highland Park, has been incorporated with a capital of \$30,000, to deal in hardware. Incorporators are: Paul Seigner, Walter B. Meierhoff, Charles Harder, Gertrude Harder and Raymond Cetzel.

Roscoe Lance has purchased the Miller hardware store at Table Grove.

John J. Hanson and C. A. Lindquist have purchased the Newman Hardware Company of Paxton. The firm will be known as Hanson and Lindquist.

### Indiana.

The LaCrosse branch of the Maxwell Implement Company has been sold to Otto C. Wobith of San Pierre, Indiana.

### Michigan.

George Gundry, formerly with the hardware firm of Gundry Sons, Fenton, has severed his connections with that firm and has gone into the hardware business at Bancroft.

### Nebraska.

Johnston Brothers Hardware store at Superior has been sold to Will Gilland of Hardy.

### Pennsylvania.

The Sanner Hardware Company of Shamokin, has purchased the hardware store of Hoff Brothers at Fourth and Penn Streets, Reading.

### Wisconsin.

A. C. Hamman has sold his hardware store at Appleton to R. Peacock and Son of Whitewater.

The Bain Hardware Company opened a new store at 161 Mair Street, Kenosha. Harry Bain is the president of this company.



# Advertising Help and Comment

*Send Us Copies of Your Advertisements. Let Us Help You Get Bigger Results by Advice and Suggestions. The Service Is Free. Don't Hesitate to Take Advantage of It.*

Flaws which it would be reasonable to point out in fine cabinet work would be of no significance in the rough and ready carpentry of the barn and chicken house.

One does not look for perfect

with washing machinery and things connected with laundrying.

Naturally, one would expect to find this impression intensified by closer examination of the copy.

The appeal of the text and illus-

the lower left hand corner of the space occupied by the advertisement.

These observations are made not in the spirit of fault-finding, but in order to emphasize the importance of the single idea in preparing copy.

With the exception of department store advertising, in which general merchandise of all descriptions is represented, it is always more effective to take a single commodity or a single group of intimately related commodities and center the persuasiveness of the advertisement upon these goods.

The advantage of this in an advertisement occupying comparatively small space is that there are no distractions and the mind is held directly upon the goods featured and described.

In an advertisement occupying sufficient space to permit such a thing, of course, it is wise to present several groups of related commodities and such sort of advertising is productive of good results.

The imperfection in the Stillwater Hardware Company's advertisement is the flaw in fine cabinet work which attracts attention by reason of its contrast with the excellence of the workmanship and material.

It is not a fault. It is simply a withholding of the full force which might be brought to play upon prospective customers by making all the space of the advertisement serve a central purpose of selling washing machines and laundrying equipment.

\* \* \*

## Change Your Copy Frequently.

There are some merchants who insert an advertisement early in the season and allow it to run during the whole season without change.

Advertisements of the kind, while possibly doing some good are not as effective as advertisements that are changed often and carry interesting announcements.

**Goodyear Tires**

## Stillwater Hardware Co.

219 South Main St. Phone 164

**Acme Quality Paints**



**FURNACE SCOOP**  
14 inch blade, price \$1.75



**Gainaday**  
**Electric Washer with new all metal cased Wringer**

**Winchester Kitchen Saws, special** .... 75c

**Winchester Loaded Shells**

New Club, per box .... \$1.00  
Repeater, per box .... \$1.25  
Leader per box .... \$1.40  
.22 Short, per box .... 25c



**Hot Point Electric Irons**  
\$6.95

**WASH BOILERS**

Fine copper bottom. \$2.75  
Heavy copper bottom \$3.50  
All copper ..... \$6.50

**WESTINGHOUSE LAMPS**

10 to 60 watt .... 40c  
60 watt ..... 45c  
75 watt ..... 75c  
100 watt ..... \$1.10  
200 watt ..... \$2.10



**Hardwood Saw Buck, special**  
50c

The new Gainaday Wringer is built for strain, hard knocks, safety. On top is a dependable safety release. One simple lever controls it. Merely turning it changes the action of the rolls—forward or backward—just the way the lever-ports. Such rolls! Length 12 inches over

joining in sheds built of rough lumber.

The most that can be expected from such structures is that they be weatherproof and serve the purpose for which they are built.

In fine cabinet work, however, small defects are noticeable by reason of contrast with the general excellence of the workmanship and material.

Approaching the matter from this angle of consideration, it is not merely a hair-splitting exercise to call attention to imperfections in the well arranged and harmoniously constructed advertisement of the Stillwater Hardware Company, which is reproduced herewith from the *Stillwater Gazette*, Stillwater, Minnesota.

The first impression gained from this advertisement is that it deals

tration is primarily to the woman buyer.

The persuasive force of that appeal is weakened by the introduction of commodities which have no relation to laundrying.

Women, as a rule, are not buyers of loaded shells. Few of them are interested in this part of the hardware store's stock.

Therefore, the introduction of the illustration and list of prices of loaded shells is out of place.

Kitchen saws do not naturally associate themselves in the minds of the reader with things for washing and ironing.

Consequently, this item also could have been omitted with the effect of strengthening the collective power of the advertisement.

The same may be said of the hardwood saw buck introduced at

# Warm Air Heating and Ventilating

*Better Installations. How to Sell More Warm Air Heaters.  
Reports of Progress in Warm Air Heater Research Work.  
Ventilating Factories, Garages, Theaters, and Houses.*

## **"GILT EDGE" HAS A FINE EXHIBIT AT MILWAUKEE EXPOSITION.**

One of the most striking displays at the recent Food, Household and Electrical Exposition, held in the Milwaukee Auditorium, was the "Gilt-Edge" exhibit by R. J. Schwab and Sons Company, Milwaukee, Wisconsin.

The space in the main arena of the Milwaukee Auditorium was devoted to food exhibit; the space in Exposition Hall was used for electrical machinery exhibits, and the booth of R. J. Schwab and Sons Company was located in the first two spaces immediately opposite the entrance in Juneau Hall.

## **Explains How to Compute Heat Losses.**

The equivalent glass surface of heat loss is explained by M. William Ehrlich, member of the American Society of Heating and Ventilating Engineers, as follows:

Doors on outside walls may be taken at the same heat loss as glass. Walls in ordinary frame houses, and brick walls for buildings not more than three stories high, may be given a like transmission value.

Practice has shown that the losses by leakage and heat transmission through the walls of such structures are one-fourth the loss through the glass of windows.



R. J. Schwab & Sons Company Exhibit at Food, Household and Electrical Exposition in Milwaukee Auditorium, Milwaukee, Wisconsin.

As may be observed in the accompanying photograph of the exhibit, a landscape mounted back of the windows and illuminated with blue and white lights gave a very realistic effect to the outdoor picture which served as background.

Moreover, the impression of verisimilitude was heightened by an intermittent snow storm—artificially produced, of course—which intensified the attraction of the booth.

The indoor picture contrasted with this outdoor scene strongly conveyed the suggestion of comfort and warmth to be derived from "Gilt-Edge" warm air heaters.

The purpose of R. J. Schwab and Sons Company in installing this exhibit at the Food, Household and Electrical Exposition was to promote business for the benefit of the "Gilt-Edge" dealers in and around Milwaukee, particularly those located on the interurban.

This allows for a further reduction to simplicity in handling the computation.

Thus, 4 square feet of wall surface are equal to 1 square foot of glass.

This reduction is termed "equivalent glass surface," usually abbreviated by the initial letters E. G. S. Then 4 square feet of wall added to 1 square foot of glass area gives 2 square feet E. G. S.

Each square foot of E. G. S. will require 80 British thermal units to compensate for the heat losses under maximum conditions.

Then the total E. G. S., multiplied by 80, gives the total loss in British thermal units.

This value having been determined, the pipe sizes are readily found by the use of the formulas presented above.

In this simple manner, leader sizes may be computed for any condition. Where there is a cold attic



above a room the E. G. S. should first be multiplied by 1.2 before determining the British thermal unit loss.

The same allowance should be made for rooms that are subject to attack by very severe winds.

It is important that the practical man clearly understands the factors that control or make up the heat loss of a given room.

It might be said that the continuous warming of a room is kept up to compensate for the transmission of heat to the colder areas outside through the materials of the building and for the loss by air leakage.

As the air of a warm temperature tends to flow toward the colder temperature, the heat provided will tend to flow toward the outside, and in that way is partly lost through the exposed building walls, glass, and crevices due to poor or loose construction.

Therefore, the more surface exposed to the weather the larger the area through which the heat is dissipated, requiring the greater supply of warm air to maintain the required interior temperature.

Heating requirements are thus controlled mainly by the exposure of the building. The total heat loss is the sum of the transmission through all surfaces exposed for a given condition of difference in temperature between the inside warm air and the outside cold air—and these are the reasons why allowances must be made for exposure.

No matter what rule is used for finding warm air heater pipe size, this weather exposure—which is the side of a room directly facing on the street or open space—must be considered in the computation and allowances made accordingly.

In no other way can the result give satisfaction in maintaining the rooms of a house at the desired temperature for comfort.

### **California Firm Handles Oil Burning Warm Air Heaters.**

Practically all oil-burning warm air heaters require an elaborate and somewhat costly mechanism for feeding the oil in atomized form to the fire pot.

Out on the Pacific Coast, however, is a firm of sheet metal contractors, McDonald & Moore, 622 Seventeenth Street, Oakland, California, which is handling a line of oil-burning warm air heaters which require no motive power, no blowers, and no pressure.

The main feature is the Valjean Carburetor Oil Burner which consists of a sheet metal cylinder with properly spaced holes in its sides and in its top a large cast-iron bound opening which connects with the firebox to be heated.

There are no plates, pans, air channels, or highly heated parts to warp, crack, or get out of place; no detachable or movable parts. It is not bolted to the firebox or attached to the oil pipe. Hence it can be withdrawn or replaced without trouble.

### **Western Warm Air Furnace and Supply Men Meet Next Month.**

A number of questions of urgent importance to the development of the trade will be discussed at the Annual Meeting of the Western Warm Air Furnace and

Supply Association, which is to be held at the Savery Hotel, Des Moines, Iowa, Wednesday, December 14th.

The Secretary of the Association, John H. Hussie, of the John Hussie Hardware Company, 2407 Cumming Street, Omaha, Nebraska, officially extends an invitation to all manufacturers and jobbers of warm air furnaces and warm air furnace fittings to be present at the sessions of this Annual Meeting, whether they are members of the Association or not.

It is recognized by the men who constitute the membership of the Western Warm Air Furnace and Supply Association that the warm air furnace trade is on the eve of a new era of expansion and that the consequent prosperity of all concerned can be rendered certain and its scope widened to include every branch of the warm air furnace industry by collective discussion and action through organization.

### **Considers AMERICAN ARTISAN a Necessity.**

TO AMERICAN ARTISAN AND HARDWARE RECORD:

In renewing my subscription I desire to say that I consider your journal a necessity in its particular lines.

E. C. BEACOM.

—, Iowa, November 19, 1921.

### **Inspection of Chimneys Should Be Included in Heating Codes.**

The matter of controlling the installation of warm air heaters by legal regulations is a subject which never loses interest.

The best warm air heater capable of being designed and installed by the science and experience of the trade would fail to give a full measure of results if the chimney with which it connected were not properly constructed.

Hence, on considering tentative clauses for a model warm air heating code, some provision should be made for inspection of chimneys.

In this connection it would be well to call attention to the annual inspection of chimneys by the fire commissioner and building commissioner of Davenport, Iowa, and emphasize the lesson to be drawn therefrom. The report of this inspection is very instructive in what it reveals.

It shows that 165 chimneys needed overhauling or repairs to make them safe and effective, and, as the inspection has not been completed, it was expected that double this number would be found.

The inspection is usually made early in the year in order to give ample time for repairs before another winter season.

To experts it is a matter of common knowledge that a chimney with a poor draft will waste fuel and much more will be consumed to accomplish a given work than if a good draft were afforded that could be checked and controlled in accordance with the needs.

The inspection of chimneys in Davenport is a custom that could well extend to every city in the United States. In the interest of public welfare, all heating plants could be well inspected to see whether or not they are qualified to accomplish their purpose.

# Practical Helps for Tinsmiths

*No Two Jobs Are Exactly Alike. Therefore, the Sheet Metal Worker Has to Meet Each Difficulty as It Comes. Send Your Problems to Us. Let Our Experts Help You.*

## METAL TOMBS CONTINUED.

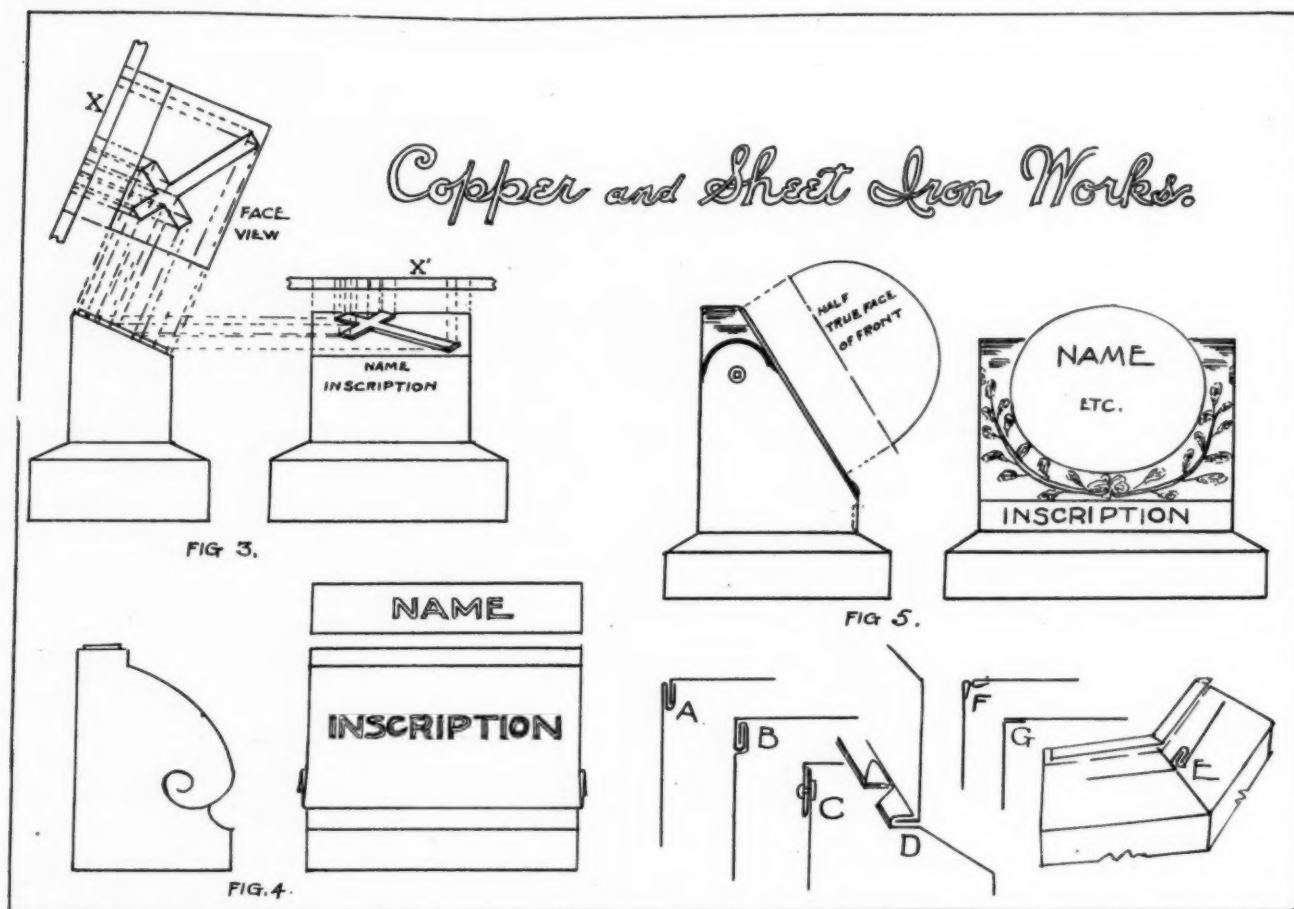
By O. W. Kothe, Principal St. Louis Technical Institute, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

In figure 3 of our present drawing, we show a very plain head tomb and that leaves a good appearance. When projecting the working drawings, a front and side elevation, as well as a face view of the top, are necessary.

of the liability of loosening up through expansion and contraction.

Where the upper part is attached to the base when copper or brass is used, a lock similar to that at G may be made, while the corners in the bases, should be double seamed on the under side as at E, which leaves a better appearance than riveting, and also overcomes the raw edges, which generally project.

Other designs of head tombs are shown in figures



Metal Tombs Continued.

The intersections established in the face view of the cross, are projected into the slope of side elevation and also into the paper strip X.

This paper strip is transferred over the front elevation as X' and then each of the lines in side elevation are projected over into front elevation.

Then lines are dropped from each point in the paper strip X' and that will give the appearance of the cross in the front elevation. The sides and front of the tomb are straight.

As these tombs should be made of copper or brass or bronze, or a hardened sheet lead, well reinforced, seams can be easily welded in that case, or they can be made as at details A-B-C.

Joints as at F and G are not recommended because

4 and 5. The particular design can be varied to suit most anything that is artistic and suitable for the occasion and the lettering may be plain, inscribed, or projecting or script.

This lettering is a very particular piece of work on this product that must always be uniform and artistic. Therefore, large shops having power machinery, are the most able to produce these designs and especially the panels and inscriptions.

Workmen who do considerable architectural cornice work, may look at these designs for the pattern drafting they can get out of it.

It is impossible to buy a friend that is worth the price.



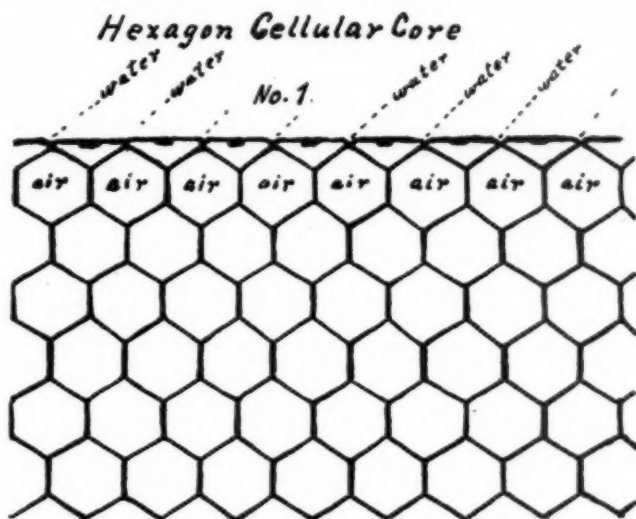
# One of the Most Common Forms of the Cellular Cores of Automobile Radiators Is the Hexagon Pattern.

## Troubles and Leaks in Cellular Cores Are Due Chiefly to Imperfections of Manufacture with Inadequate Machinery.

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by E. E. Zideck, New York City.

### TENTH ARTICLE.

One of the most common patterns of the cellular cores of automobile radiators is the *hexagon* pattern. The strips of metal of which this core is constructed are corrugated each as shown in picture No. 2.



Each line drawn in this picture is one strip. In constructing the core, the corrugated strip is cut in length equal to two heights of the core, and bent over in one of the corrugations (illustrated on top of picture 2) so as to make the corrugations meet and form hexagons.

This doubled up strip is bent at the ends where cut, and seamed. The seamed end forms one-half of the completed hexagon.

The other end, that which has been bent over doubling the strip, forms a whole hexagon.

The strips, after having been doubled and seamed, are arranged in a form, the exact height and width of the core desired, intermittently one whole hexagon, and one-half hexagon, at the ends.

It will be seen on top of illustration No. 2, that by placing one whole hexagon alongside of one-half hexagon, the strips fit into each other and form the patterns illustrated in No. 1 of the pictures.

Again the vertical lines (as shown in the diamond pattern of the cellular core discussed in the preceding installment) represent *four* thicknesses of the metal; and the other lines but *two* thicknesses.

Looking at the core when it is inserted in the radiator, it appears as if the hexagons were units, formed in their full shape and joined onto each other in the order they appear to run.

This is a delusion not easily overcome, and even experienced radiator men can not help but become its victims, as the lines formed by the hexagon running from corner to corner, are perfectly natural and their real joints are not seen.

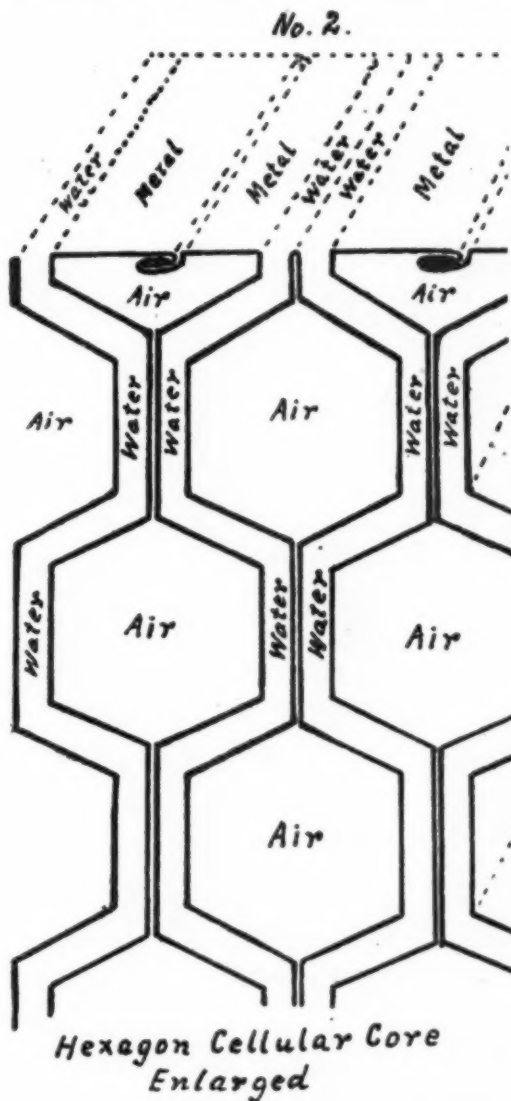
It has been often suggested that the cutting across the core will reveal the strips in their true formation, but, it is not practical to cut a complete core nor to have pieces of old cores at hand for that purpose.

Furthermore, it is not always possible to recognize the construction from a cross-cut.

The melting apart of the several strips which go into a section of the core would be more satisfactory.

This all takes time, however, and never is the result such as to guarantee identification.

On the other hand, the study of the lines illustrating the various formations of individual and joined



strips will result in perfect familiarity with the different constructions and make the work of repairing easy.

The above illustrated hexagon core, owing to the joints running in a zig-zag way, will seldom break apart in these joints.

Leaks will be few in the surface joints. But owing to the comparatively large openings in the joints where the strips are doubled and formed into one-half of the

hexagon to be seamed, the fit to the tanks is not always as it should be, and leaks will be found there.

The *make* of the cellular core is largely responsible for troubles and leaks in it.

Many cores of this kind are begin made with inadequate machinery, causing the strips to join tightly in some places and to be almost lose in others, and the stopping of circulation in the narrow passages and tearing apart of the solder in the loosely joined places is a common occurrence.

The dipping of these cores plays the most important part in their construction.

If the solder in which the faces and the bottoms are dipped be too hot, solder will flow out of the metal joints and the seams in the bottoms and the front and back faces will leak like a sieve.

Again, if the dipping solution or the solder be impure, the impurities might enter the joints and prevent solder from taking hold.

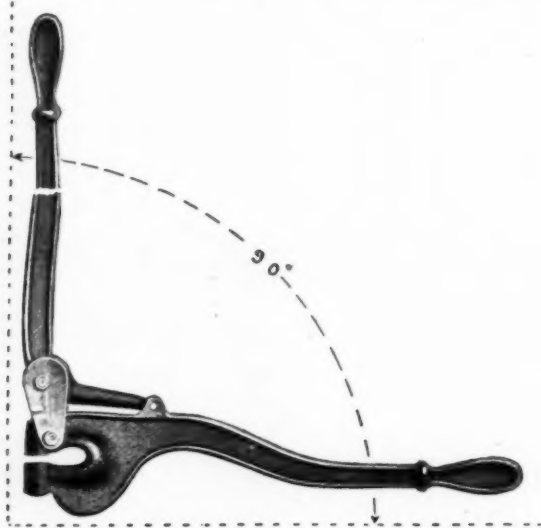
As the cellular core is impossible to test for leaks until after it has been connected with the tanks, the careless dipping, where permitted, will be the source of untold trouble, much of it not suspected until after the radiator has been put to work.

The radiator repairer having a large re-coring trade could write books of woe about the troubles he has had with cores shipped to him, new, and assumed to be tight. Many times he had to work hours and days re-soldering the numerous joints in the too-hot-dipped or dirty-solder-dipped core. And, how many radiators are there upon the cars, steaming upon the slightest of motor exertion, in which there is inserted a core, repaired either in the factory or in the repair shop, in which the water passages are stopped by solder melted into them in making the too hot or impure dipped core tight?

*(To be continued)*

### **New Whitney Punch Has Several Advantageous Improvements.**

Several distinct improvements over the old style No. 7 Whitney punch are found in the new No. 7



**New No. 7 Whitney Roller Bearing Punch.**

Whitney Roller Bearing Punch, manufactured by the Whitney Metal Tool Company, Rockford, Illinois.

The new machine is four inches longer than the old

style No. 7. It is so designed that it will punch and function inside of 70 degrees, whereas before it required 90 degrees plus the overhang of the handle.

The Whitney Metal Tool Company has widened its service with reference to this new No. 7 roller bearing punch in this, that if any customer wishes any of the three parts of this punch replaced, it can be furnished separately. Formerly if a customer wished the upper handle, the company had to furnish both the upper handle and eccentric because in order to assemble the two it was necessary to weld by acetylene process the eccentric. The eccentrics are now manufactured on the Company's screw machine and can be replaced without any trouble whatever.

Particulars and prices can be obtained by addressing the Whitney Metal Tool Company, Rockford, Illinois.

### **Hold Triple Meeting of Locals in Battle Creek, Michigan.**

The members of the Jackson and Kalamazoo Sheet Metal Contractors' Associations, met Wednesday evening, November 16th, at a banquet in the Post Tavern hotel in Battle Creek, Michigan, as the guests of the Battle Creek Sheet Metal Contractors' Association.

At the end of the feast, John Darlington introduced Frank E. Ederle, Secretary Michigan Sheet Metal Contractors' Association, as the toastmaster of the evening.

A. N. Case of Jackson gave a very interesting talk on the progress of his association and of the plans which are being completed for entertainment at the State Convention in Jackson, Feb. 21, 22, 23, 1922.

He stated that he was not permitted at this time to divulge any of the secrets of the arrangements but urged all to attend and enjoy the many surprises which are in store for them.

Homer Brundage of Kalamazoo was next called on for remarks and outlined in brief what he thought was expected of an association. He pointed very clearly the many advantages the Kalamazoo Association was giving its members and the possibilities of an organization if it were possible to eliminate the petty jealousies which frequently exist.

Mr. Brundage is Secretary of the Kalamazoo Association and is giving a great deal of time and thought to the organization.

Following these talks cards were distributed on which the dealers were requested to ask any questions on which they desired information and nearly all present asked at least one question.

The question box was conducted by the State Secretary F. E. Ederle, who frequently would call on the various members to answer the questions instead of trying to answer them himself.

This plan worked out very well and before the close every one had taken part in the discussions.

In all it made one of the most interesting and instructive events ever staged by the Battle Creek Association.

Sometimes a man will do a mean thing because he has confidence in his ability to square himself by offering an apology.



# Jim Proffitt's Bid Was Seventy-two Dollars Higher Than That of His Competitor, But Jim Got the Job.

*The Factory Superintendent Came to Jim's Shop to Try to Bluff Him into Lowering the Bid, and Learned a Lesson of Service.*

Written Especially for AMERICAN ARTISAN AND HARDWARE RECORD by J. C. Greenberg, Cleveland, Ohio.

Here is an example of real salesmanship that you will not run across once in a thousand times in a sheet metal shop.

I happened to be in Jim Proffitt's shop when a superintendent from a factory came in to see Jim about installing some ventilators.

This superintendent was a pompous sort of a business man who had an idea that the "tinner" is a dub and could be easily bluffed. Mr. Superintendent was right in a general way, but this time he was in the wrong shop to work a bluff.



J. C. Greenberg.

It seems that Jim had handed in a figure on the job, and was \$72 high. This is the conversation that took place:

"I can not understand just why you should charge me \$72 more than the lowest bid," said Mr. S. "Your material is the same gauge as the other man figured on. There is only one way to do the job and that is the

right way. I expect to have the job done right, so just why should you ask me so much more than your competitor should expect?"

"The best way to answer your question, Mr. S.," Jim replied with a smile, "is to ask you one. Will you please tell me just why you should come in to see me after you have had a low figure offered you?"

"I came in merely out of curiosity," frankly answered Mr. S. "I just want to see why men in the same business should be so widely different in their estimates. If you can prove to me where I will profit in paying \$72 more I shall be willing to pay it."

"Your system is very commendable, Mr. S.," Jim replied. "I shall be glad to try to convince you providing you are willing to recognize a truth which you use in your very own business."

"I am always willing to be convinced," admitted Mr. S. "A man who can not learn at least one thing each day shall soon die of ignorance. Please proceed, Mr. Proffitt."

I was all attention. I was on edge to see what reason Jim could present which would be worth \$72 to Mr. S.

"In the first place, Mr. S.," Jim began slowly, "you are really not buying a ventilator. You are not buying galvanized iron, and you are not buying a bid. You are, in all truth, buying a service that nothing else but a ventilator can give. You must have that service furnished in the right kind of manner."

"That is all right," agreed Mr. S., "but your competitor agrees to furnish that very same service."

"No doubt about this at all," Jim answered. "One may know what kind of service is required, but at the same time he may forget that good service is worth a certain price. I figured the job to include two legitimate charges—"

"Two charges!" exclaimed Mr. S. "Two charges! No wonder they call you sheet metal men robbers and profiteers! All legitimate business houses are content with only one charge—and here you demand two charges. I begin to see that the public is right after all—"

"Now just wait one moment," Jim insisted. "You came in here to satisfy your curiosity but you get impatient before you have gained the knowledge you came in after. Just keep cool and learn something."

"Proceed," Mr. S. said resignedly.

"You must realize, Mr. S.," Jim began to explain, "that there are four elements in any transaction like ours. There are overhead, labor, material, and profit. It is so in your own business. There can not be any of these elements overlooked. Now then, each transaction has two values which are, the market value and the service value. These values must be taken into consideration, and likewise charged to the job."

"I do not understand your hokum," Mr. S. answered impatiently. "I can not quite see your point. Do you infer that market value is one thing, and service value is another?"

"I do not infer, Mr. S., I am positive about this. Let me put it to you in a concrete form. By market value I mean that overhead, labor and material are all that go into the job—but the service which the job should render must be right—long after the price is paid. I can readily sell you the ventilators at market value which would be approximately \$72 less if you desire to buy that way."

"Just what do you mean, Mr. Proffitt," asked Mr. S. "I am not quite clear about your statement. Please explain it more clearly."

"I mean by market value," answered Jim, "that I will deliver the ventilators as specified to your factory, unload them, and collect my bill. I mean, sir, that I will sell you the ventilators and give you your money's worth at that."

Mr. S. thought a little while and said: "What good are the ventilators if they are not installed? If I buy them as you say, at market value, they would not be of any use to me at all. They would only be white elephants on my hands."

"That is just it, Mr. S.," Jim explained with enthusiasm. "You will not get service out of the ventilators. You see, you do not get service, and you do not pay for it. There is where the service value comes in justly. I must make a legitimate profit in my business. Suppose you go to the lumber yard and buy a bundle of shingles. You pay for the shingles only. But when you want the shingles nailed on, there will be a higher price placed on the work. It is the same thing with this very job. You certainly do not expect to get service for nothing, do you, Mr. S.?"

"Mr. Proffitt," said Mr. S., "you have stated a great truth. I begin to see where the job is worth the price you ask. I really did not think of the transaction as you put it. After all service is what I am buying, and, as you say, it is worth real money. But will you tell me, if you can, how your competitor can afford to offer the same installation for so much less?"

"This hard to answer, Mr. S.," Jim answered slowly, "there are so many unsuccessful business men who do not really recognize that there must be a profit to every job done. They have no system in their office and do not know the first cost so they can fix a legitimate selling price. It is in reality very sad to think of it. They work year in and year out and at the end of every job there is little or no profit. This is not progressive business, and is the cause of unreliable transactions."

"No, I believe you are perfectly right. We in our own business follow out along the same line as you do and, as you know, we are a very successful concern in our line. You may install the ventilators, and I feel certain that the insurance of getting satisfaction is worth the difference in price."

### **Apollo Nickelzinc Sheets Offer Chance for Trade Extension.**

A big chance for trade extension is offered to sheet metal contractors and hardware dealers by the wide variety of uses for which Apollo Nickelzinc sheets are available.

Apollo Nickelzinc is a light, pliable, tough sheet metal with a bright, non-corroding, non-peeling finish.

It is manufactured by an electrolytic process by the Apollo Metal Works, La Salle, Illinois.

The body is of high grade rolled zinc, coated with pure nickel which, according to the assurance of the manufacturers, will never crack or chip off. It can be hammered, bent, stamped, or formed without losing its nickel coating.

This wonderful metal is suitable for kitchen cabinet and table tops, chest trimmings, kitchen sink backs, drain boards, wash boilers, stove boards, radiator shields, steam tables, auto running boards, and scores of other uses.

Better a word that lasts than the last word.

### **Notes and Queries.**

#### **Ford Gasolene Tank Caps.**

From Ever-Oil System Company, 1210 East Sixth Street, Los Angeles, California.

Please advise us where we can purchase Ford gasolene tank caps.

Ans.—Beckley Ralston Company, 1801 South Michigan Avenue; Chicago Automobile Supply House, 1349 South Michigan Avenue; Fred Allen, 1610 South Michigan Avenue; all of Chicago, Illinois.

#### **Lamp Burner.**

From J. H. Wickstrom, Beresford, South Dakota.

Can you tell me where I can purchase a lamp burner No. 2 that will work without a chimney, for my stock fountain?

Ans.—Vaughn's Seed Store, 8 West Randolph Street, Chicago, Illinois.

#### **"Buffalo" Water Heater.**

From Schlick Sons, 1154 North Clark Street, Chicago, Illinois.

Will you kindly inform us who makes the "Buffalo" water heater?

Ans.—W. A. Case and Sons Manufacturing Company, Buffalo, New York.

#### **Automobile Radiator Repairing.**

From H. O. Anderson and Son, Sturgis, South Dakota.

We have been reading the radiator repair articles in AMERICAN ARTISAN AND HARDWARE RECORD every week and have decided to go into the radiator repair business in conjunction with our hardware and sheet metal shop. Where can we get information regarding cost of tools, supplies, etc.?

Ans.—F. L. Curfman Manufacturing Company, Maryville, Missouri, can give you full information regarding equipment of a radiator repair shop and can furnish you with a complete line of tools, supplies, etc. G. and O. Manufacturing Company, Replacement Department, New Haven, Connecticut; McKinnon Dash Company, Buffalo, New York, and Jaffe Radiator Company, 741 West Van Buren Street, Chicago, Illinois, make radiators and radiator cores.

#### **Automobile Radiator Outfits.**

From Eugene Gissinger, 129 State Street, Wauwatosa, Wisconsin.

Can you tell me where I can get an outfit for automobile radiator repairing?

Ans.—F. L. Curfman Manufacturing Company, Maryville, Missouri, can supply you with a complete outfit for automobile radiator repairing. G. and O. Manufacturing Company, Replacement Department, New Haven, Connecticut; McKinnon Dash Company, Buffalo, New York, and Jaffe Radiator Company, 741 West Van Buren Street, Chicago, Illinois, make radiators and radiator cores.

#### **Grates for Sun Heater.**

From A. F. Schemmer, Rock Valley, Iowa.

Will you please tell me where I can get a full set of grates for Sun Heater, No. 329?

Ans.—Northwestern Stove Repair Company, 654 West Roosevelt Road, Chicago, Illinois.

#### **Fire Proof Cabinets.**

From T. H. Norr, Piqua, Ohio.

Where can I buy steel fire proof cabinets to hold drawings, other papers, etc.?

Ans.—Art Metal Products Company, 514 South Green Street; Macey Company, 35 South Wabash Avenue; The Globe-Wernicke Company, 170 West Monroe Street; The Shaw Walker Company, 163 West Monroe Street; all of Chicago, Illinois.



# Illustrations of New Patents

*Watch This Page. Keep Yourself Informed Concerning Improved Devices Which May Save Labor in Your Shop or Add Another Source of Income to Your Retail Store.*

1,393,792. Metal Facing for Inside of Window Openings. George A. Knapp, Chicago, Ill., assignor to Knapp Brothers Manufacturing Company, a Corporation of Illinois. Filed Feb. 18, 1921.

1,393,922. Ladder Support. Edwin N. Taylor, Cedar Rapids, Iowa. Filed Jan. 16, 1920.

1,393,999. Attachment for Blowtorches. Thomas W. Garnett, Topeka, Kan. Filed Nov. 10, 1920.

1,394,166. Penknife. Thomas C. Gibson, Forsyth, Ga. Filed March 16, 1921.

1,394,539. Wrench. Frank Danielson, Chicago, Ill. Filed June 1, 1920.

1,394,562. Soldering Iron. Frank Kuhn, Lawrence H. Thomas, and Jules G. Spiess, Detroit, Mich., assignors to American Electrical Heater Company, Detroit, Mich., a Corporation of Michigan. Filed June 11, 1920.

1,394,608. Tool. Stephen A. Davern, Cleveland, Ohio, assignor of one-half to Frederick E. Buchser, Cleveland, Ohio. Filed April 29, 1920.

1,394,626. Insect Trap. Reinhold G. Koch, New York, N. Y. Filed April 29, 1920.

1,394,628. Lathe Tool Holder. Le Roy Kramer and Alexander Boome, Chicago, Ill. Filed Feb. 28, 1918.

1,394,629. Sled. John Leicht, Jr., Burlington, Iowa. Filed Feb. 9, 1920.

1,394,721. Gas Burner. John Festa, Brooklyn, N. Y. Filed April 27, 1920.

1,394,735. Ventilator Apparatus. Paul R. Jordan, Indianapolis, Ind. Filed Aug. 31, 1918.

1,394,795. Drill or Tap Holder. Patrick Sauve, Flint, Mich. Filed Oct. 2, 1919.

1,394,801. Washboard. George Bernard Wheeler, New York, N. Y. Filed Sept. 11, 1920.

1,394,857. Radiator Core. Jacob W. Miller, Hanover, Pa. Filed Aug. 13, 1920.

1,394,886. Safety Razor. John J. Catron, Bonham, Tex. Filed April 13, 1920.

1,394,903. Implement Draft Appliance. Robert M. Hunter, Lexington, Ky., assignor to The Dunham Company, Berea, Ohio, a Corporation of Ohio. Filed Nov. 10, 1919.

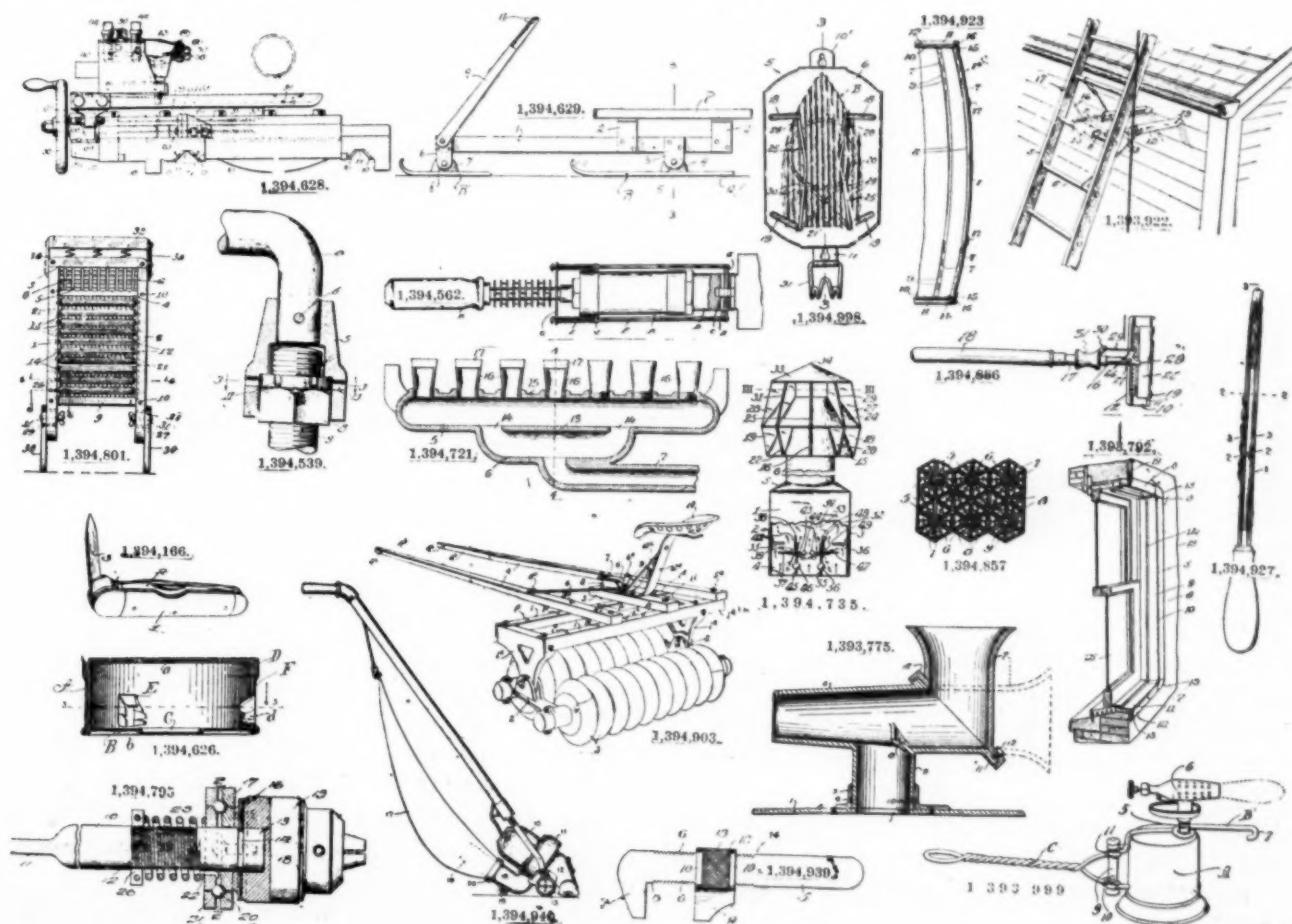
1,394,923. Sheet Metal Barrel. James W. McNeil, Newark, N. J. Filed June 4, 1920.

1,394,927. Steel for Sharpening Cutlery. Ernest C. Martin, Antrim, N. H. Filed March 2, 1920.

1,394,939. Wrench. Henry T. Roberts, New York, N. Y. Original application filed May 21, 1919. Serial No. 298,612. Divided and this application filed Feb. 7, 1920.

1,394,940. Suction Cleaner. William W. Rosenfield, White Plains, N. Y., assignor to Electric Vacuum Cleaner Company, Inc., a Corporation of New York. Original application filed May 24, 1915, Serial No. 29,968. Patent No. 1,348,582. Divided and this application filed June 25, 1920.

1,394,998. Sadiron Holder. Ira Lee, Seattle, Wash., assignor to Wm. J. Lee, Seattle, Wash.



# Weekly Report of the Markets

*General Conditions in the Steel Industry. Review of Prices and Tendencies in Sheet Metals, Pig Iron, etc.*

## **RATE OF STEEL PRODUCTION CONTINUES FAIRLY GOOD.**

The rate of production in the steel industry remains fairly good in spite of a falling off in new business.

The whole steel industry is solidly for the limitation of armaments from Judge Gary, chairman of the United States Steel Corporation, to Charles M. Schwab, head of the largest war materials manufacturing works in the world, as publicly expressed by them at the semi-annual meeting of the American Iron & Steel Institute in New York last Friday.

From a utilitarian point of view, the loss in business through a discontinuation of our armament program would be only a flea bite to America's steel industry.

As proof of this the 30 warships that the United States intends to scrap required for their construction less than 600,000 tons of steel while our annual finished steel capacity is 40,000,000 tons.

The steel in 30 war ships, therefore, represents only  $1\frac{1}{2}$  per cent of one year's production and the building of this number of vessels would require from 7 to 8 years if all of the eight yards of the country equipped for such work were operated full.

The total capacity for producing armor plate in this country is only 41,000 tons a year.

Exports of steel and iron from the United States in October were valued at \$29,706,437, compared with \$27,740,228 in September and \$103,546,679 in October of last year.

This shows a gain of nearly \$2,000,000 in a month, but the total is still some 30 per cent of the total a year ago.

Exporters say that the bulk of their orders and inquiries are coming in from Japan, although the volume has fallen off slightly of late.

One recent order was for 78 miles of  $\frac{3}{8}$ -inch wire, to be used by the Tokio Electric Light Company, and 200 tons of No. 8 gauge plain wire.

It is said 75-pound steel rails are being quoted at \$46.50 a ton c. i. f. Yokohama, and that recently 8,000 tons of 60-pound rails were sold at the rate of \$47.25 c. i. f. Ataru by exporters in the United States.

## **Steel.**

As was the case last week, prices continued to sag with sheets leading. Pipe and tubular goods seem to be the most favored of iron and steel products at the present time and pipe mills in the Pittsburgh district maintained a 60 per cent of capacity operation during the week although a slight tapering off was in evidence at the close.

Demand is about evenly divided between standard steel pipe and oil country goods with some shading of the September 16 schedule of prices but not enough to upset the market.

New business in steel and iron is coming in at a rate of only about 25 per cent of capacity at the present time but despite the recent falling off steel mill operations are being maintained at very near the rate attained at the close of last month.

Starting with March new business for the following 6 months ran between 5 and 10 per cent capacity; in September it jumped to 36 per cent and in October fell off to 24 per cent. The cutting of sheet quotations featured in the realm of steel prices.

Railroad equipment and rail buying is still the feature of the steel market with business in structural steel following along in its wake.

It is thought in some quarters that railroad buying on a real scale has actually commenced and will grow from now on.

Featuring the market this week is the inquiry of the C. B. & Q. for 7,300 freight cars calling for between 100,000 and 150,000 tons of rolled steel while the directors of the Chicago & Northwestern have stated their intention of spending between \$5,000,000 and \$10,000,000 on new equipment.

The New York Central will receive bids on 200,000 gross tons of steel rails until Nov. 25 and the Norfolk & Western will take bids on approximately 40,000 tons of rails until Nov. 30.

The New York Central has just specified against 35,000 tons of rails and the Illinois Central is taking bids on 2,500 gondolas and has just ordered 350 refrigerator cars.

The Alabama, Tennessee & Northern has ordered 300 freight cars and the Wabash has contracted for the repairs to 250 hopper cars.

The Missouri Pacific is inquiring on repairs to 1,000 box cars and smaller orders and inquiries swell the total figure.

## **Copper.**

The copper market is still showing more and more strength under a continued good demand, although in some quarters it is reported that the inquiries and orders are showing up in smaller volume.

This is particularly true of domestic demand, as export business is still being sustained. The amount of copper that the large producers had set aside for December delivery is about exhausted and only a small portion remains, on which the quotation has been advanced  $\frac{1}{8}$  cent to  $13\frac{5}{8}$  cents a pound.

The January delivery is quotable from  $13\frac{5}{8}$  to  $13\frac{3}{4}$  cents and no later months will be quoted by the large producers.

In the outside market business is still being done at  $13\frac{3}{8}$  cents for prompt delivery, although the amount at this price is small. December, January and February are quoted at  $13\frac{1}{2}$ ,  $13\frac{5}{8}$  and  $13\frac{3}{4}$  cents, respectively.

One commentator states that it is doubtful if com-



mercial history records a duller period for general business than the intervening period between April and the present, yet the chances are still favorable of copper selling around 15 cents a pound before Jan. 1, 1922.

At the present rate of consumption, and not allowing for any spectacular buying, the closed down copper mines of this country should bestir themselves by early spring if a runaway market for copper prices is to be prevented.

The average price of 20 active stocks at present shows an advance of about  $11\frac{1}{2}$  points from the extreme low of last December and about 8 points from the low prices of this year.

This improvement no way reflects what is in store for this class of stocks with a restoration of a healthy condition for the copper industry.

In the Chicago market copper sheet, mill base, increased  $\frac{1}{2}$  cent per pound, making the price now in effect  $20\frac{3}{4}$  cents per pound.

### **Tin.**

So far this month there has been no really good demand for tin, and almost the only activity has been the in-and-out trading between a few concerns.

With inventory taking for the year almost at hand, consumers do not care to add to their stocks on hand, and the amount of tin contracted for for 1922 delivery is amazingly small.

During the week tin prices in the domestic market showed net gains of from  $\frac{1}{4}$  to  $\frac{1}{2}$  cent, while London prices were up for a net advance of £1 2s 6d for the list.

These increases were reflected in Chicago by an advance from  $31\frac{3}{4}$  cents to  $32\frac{5}{8}$  cents per pound for pig tin and from  $32\frac{3}{4}$  cents to  $33\frac{5}{8}$  cents per pound for bar tin.

### **Solder.**

Chicago solder prices increased 25 cents per hundred pounds during the week. Quotations now in effect are as follows. Warranted, 50-50, per hundred pounds, \$20.00; Commercial, 45-55 per hundred pounds, \$18.50; and Plumbers', per hundred pounds, \$17.25.

### **Lead.**

The lead market continues unchanged. The leading interest gives no indication of increasing its prices.

St. Louis lead receipts last week were 56,670 pigs, as against 31,980 the week previous, while receipts since the first of the year aggregate 2,176,150 pigs, as compared with 2,335,800 during the corresponding period last year.

### **Zinc.**

Zinc demand fell off materially the past week and prices were correspondingly weak although producers did not press sales and are satisfied with the underlying strength to the market.

A net loss for the week of  $2\frac{1}{2}$  points was recorded in the St. Louis market and the price there closed at 4.70 cents a pound.

The spot New York price was off 5 points at 5.50 cents. In fact, the demand this week had been far below the average of recent weeks.

Some producers are unwilling to book orders at existing prices even if the business were offered.

In London the market was much stronger and advanced 2s 6d, spot closing at £25 7s 6d and futures at £26 10s.

The equivalents of these prices at the current rate of exchange were 4.60 for spot and 4.75 cents a pound for futures which represents a net gain of 5 points for the week.

### **Sheets.**

According to reports gathered by the Iron Trade Review, prices on sheets are being shaded about \$2 per ton in many transactions in the Chicago district.

Demand is fairly good although not as strong as a month ago and in the effort to get business some makers have quoted No. 28 black at 2.90 cents, Pittsburgh, and No. 28 galvanized at 3.90 cents, Pittsburgh.

The Inland Steel Company continues operating its sheets department full, and while it has sufficient tonnage for full shipment during the year, it can take business for rolling during the third week in December for delivery in January.

### **Tin Plate.**

Heavy winter operations are assured in the manufacturing end of the tin plate industry as the result of the receipt of specifications at least three months in advance of the date they usually come in during slack times.

In the case of the leading interest which operated on the basis of over 50 per cent of capacity last week, except Armistice day, and which has approximately 53 or 55 per cent of its tin mills scheduled this week, it anticipates being able to maintain at least an 80 per cent operation from possibly the last week of this month or the first week in December until about the end of the first quarter of next year.

### **Old Metals.**

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$13.50 to \$14.00; old iron axles, \$18.50 to \$19.00; steel springs, \$13.75 to \$14.25; No. 1 wrought iron, \$12.50 to \$13.00; No. 1 cast, \$12.00 to \$12.50; all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper,  $6\frac{3}{4}$  cents; light brass, 4 cents; lead  $3\frac{3}{4}$  cents; zinc, 2 cents; cast aluminum, 9 cents.

### **Pig Iron.**

The pig iron market is quiet and prices weak. In the Pittsburgh district at least one interest is offering basic at \$19, Valley furnace, and one lot of resale iron amounting to 20,000 tons is featuring the market, inasmuch as it is thought that it is available at as low as \$18.50, Valley furnace.

In the absence of sales, however, \$19 is still quoted. In the Chicago district, the ruling price for foundry, basic and malleable still appears to be around \$21, base furnace, but shading of a dollar has been done.

In the Birmingham territory, the \$19 base that has been so successfully held for some weeks past has broken through to \$18 and that market is duller than at any previous time this year.

# Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

## METALS

### PIG IRON.

Chicago Foundry ... 21 00 to 22 00  
Southern Fdy. No. 2, 24 66 to 25 67  
Lake Sup. Charcoal... 31 50 to 33 50  
Malleable ..... 21 00 to 22 00

### FIRST QUALITY BRIGHT TIN PLATES.

	Per Box
IC 14x20 112 sheets	\$ 9 65
IX 14x20.....	11 05
IXX 14x20.....	12 30
IXXX 14x20.....	13 65
IXXXX 14x20.....	15 05
IC 20x28.....	19 30
IX 20x28.....	22 10
IXX 20x28.....	24 60
IXXX 20x28.....	27 30
IXXXX 20x28.....	30 10

### COKE PLATES

Cokes, 150 lbs.... 20x28 \$11 80  
Cokes, 200 lbs.... 20x28 12 00  
Cokes, 214 lbs.... IC 20x28 12 35  
Cokes, 270 lbs.... IX 20x28 14 10

### BLUE ANNEALED SHEETS.

Base.....per 100 lbs. \$3 38

### ONE PASS COLD ROLLED BLACK.

No. 18-20.....per 100 lbs. \$3 95  
No. 22-24.....per 100 lbs. 4 00  
No. 26.....per 100 lbs. 4 05  
No. 27.....per 100 lbs. 4 10  
No. 28.....per 100 lbs. 4 15  
No. 29.....per 100 lbs. 4 25

### GALVANIZED

No. 16.....per 100 lbs. \$4 40  
No. 18-20.....per 100 lbs. 4 55  
No. 22-24.....per 100 lbs. 4 70  
No. 26.....per 100 lbs. 4 85  
No. 27.....per 100 lbs. 5 00  
No. 28.....per 100 lbs. 5 15  
No. 29.....per 100 lbs. 5 65

### BAR SOLDER.

Warranted,  
50-50 .....per 100 lbs. \$20 00  
Commercial,  
45-55 .....per 100 lbs. 18 50  
Plumber's .....per 100 lbs. 17 25

### ZINC.

In Slabs .....\$5 15

### SHEET ZINC.

Cask lots .....10c  
Less than cask lots....10 1/4-10 1/2c

### COPPER.

Copper Sheet, mill base...\$0 20 1/4

### LEAD.

American Pig .....\$4 80  
Bar ..... 5 55  
Sheet.  
Full coils.....per 100 lbs. \$7 80  
Cut coils .....per 100 lbs. 8 05

### TIN.

Pig tin .....32 1/2c  
Bar tin .....33 1/2c

## HARDWARE, SHEET METAL SUPPLIES, WARM AIR HEATER FITTINGS AND ACCESSORIES.

### ADZES.

Coopers'.  
Barton's .....Net  
White's .....Net

### ALARM CLOCKS.

Big Ben and Baby Ben...per doz. \$25 80  
America ..... 13 56  
Tattoo ..... 28 50

### AMMUNITION.

Shells, Loaded, Peters.  
Loaded with Black Powder...18%  
Loaded with Smokeless Powder .....18%

Winchester.  
Smokeless Repeater Grade, .....10 & 4%  
Smokeless Leader Grade, .....10 & 4%  
Black Powder.....10 & 4%

### U. M. C.

Nitro Club.....10 & 4%  
Arrow .....10 & 4%  
New Club.....10 & 4%

### Gun Wads—per 1000.

Winchester 7-8 gauge.10&7 1/4%  
" 9-10 gauge.10&7 1/4%  
" 11-28 gauge.10&7 1/4%

### Powder.

Each  
DuPont's Sporting, kegs..\$11 25  
" " 1/4 kegs 3 10  
DuPont's Canisters, 1-lb.. 56  
" " kegs.. 22 00  
" " 1/4 kegs 5 75  
" " canisters 1 00  
Hercules "E.C." kegs..... 22 50  
Hercules "Infallible," 25 can drums ..... 22 00  
Hercules "Infallible," 10-can drums ..... 9 00  
Hercules "E.C." and "Infallible," canisters ..... 1 00  
Hercules W. A. 30 Cal. Rifle, canisters ..... 1 25  
Hercules Sharpshooter Rifle, canisters ..... 1 25  
Hercules Bullseye Revolver, canisters ..... 1 00

### ASBESTOS.

Paper up to 1/16.....10c per lb.  
Millboard 3/32 to 1/4...10 1/2c per lb.  
Corrugated Paper (250 sq. ft.).....\$6.50 per 100 lbs.  
Rollboard .....11c per lb.

### AUGERS.

Boring Machine... 40 @ 40&10%  
Carpenter's Nut.....50%  
Hollow.  
Bonney's.....per doz. \$30 00  
Post Hole.  
Iwan's Post Hole and Well .....30 and 5%  
Vaughan's, 4 to 9 in., without handles, per doz. \$14 00  
Ship.  
Ford's .....Net

### AWLS.

Brad.  
No. 3 Handled...per doz. \$0 65  
No. 1050 Handled " 1 40  
Patent aas't'd, 1 to 4 " 85

### HARNESSES.

Common .....per doz. \$1 05  
Patent ..... " 1 00

### Pegs.

Shouldered ..... " 1 60  
Patented ..... " 75

### Scratch.

No. 18, socket  
Handled .....per doz. \$2 50  
No. 344 Goodell-Pratt, list less.....35-40%  
No. 7 Stanley.....per doz. \$2 25

### AXES.

First Quality, Single  
Bitted (unhandled), 3 to 4 lb., per doz..... 14 50  
Good Quality, Single  
Bitted, same weight, per doz. .... 13 00

### BAGS, PAPER, NAIL.

Pounds .. 10 16 20 25  
Per 1000...\$5 00 6 50 7 50 9 00

### BALANCES, SPRING.

Universal.  
Sight Spring.....List less 25%  
Straight .....List less 25%

### BARBS, WRECKING.

V. & B. No. 12.....\$0 45  
V. & B. No. 24..... 0 75  
V. & B. No. 324..... 0 80  
V. & B. No. 30..... 0 85  
V. & B. No. 330..... 0 90

### BEATERS.

Per doz.  
Carpet. .  
No. 7 Tinned Spring Wire...\$1 10  
No. 8 Spring Wire Cop-  
pered ..... 1 50  
No. 9 Preston..... 1 75

### BELLS.

Call.  
3-inch Nickered Rotary Bell,  
Bronzed base...per doz. \$5 50

### Cow.

Kentucky .....33 1/4%

### Door.

Per doz.  
New Departure Automatic...Net

### Rotary.

3 -in. Old Copper Bell.....Net  
3 -in. Old Copper Bell,  
fancy .....Net  
3 -in. Nickered Steel Bell...Net  
3 1/4 -in. Nickered Steel Bell...Net

### Hand.

Hand Bell, polished.....  
.....List plus 15-10%  
White Metal...List plus 15-10%  
Nickel Plated....List plus 10%  
Swiss .....Net

### Miscellaneous.

Church and School, steel  
alloys .....30%  
Farm, lbs.. 40 50 75 100  
Each .....\$3 00 3 75 5 50 7 25

### BEVELS, TEE.

Stanley's Rosewood handle, new  
list .....Nets  
Stanley iron handle.....Nets

### BINDING CLOTH.

Zinc .....55%  
Brass .....40%  
Brass, plated .....60%

### BITS.

Auger.  
Jennings Pattern.....Net  
Ford Car.....List plus 5%  
Ford's Ship..... " 5%  
Irwin .....35%  
Russell Jennings.....Plus 15%  
Clark's Expansive.....33 1/4%  
Steer's " Small list, \$22 00..5%  
" " Large " \$28 00..5%  
Irwin Car.....35%  
Ford's Ship Auger pattern  
Car .....List plus 5%  
Center .....10%

### Countersink.

No. 18 Wheeler's...per doz. \$2 35  
No. 20 " " 3 00  
American Snailhead " 1 75  
" Rose " 2 00  
" Flat " 1 40  
Mahew's Flat " 1 60  
" Snail " 1 90

### Dowel.

Russel Jennings.....plus 20%

### Gimlet.

Standard Double Cut Gross \$8 40  
Nail Metal Single  
Cut .....Gross \$4 00—\$5 00

### Reamer.

Standard Square.....Dox. \$3 50  
American Octagon... " 2 50

### Screw Driver.

No. 1 Common.....Each 13c  
No. 26 Stanley.....Each 70c

### BLADES, SAW.

#### Wood.

Atkins 30-in.  
Nos. .... 6 40 26  
\$8 90 \$9 45 \$5 40  
Disston 30-in.  
Nos. .... 6 66 26  
\$9 45 \$10 05 \$9 45

### BLOCKS.

Wooden .....20%  
Patent .....20%

### BOARDS.

Per doz.  
26x26, wood lined.....\$14 45  
28x28, " " 16 95  
30x30 " " 19 00  
26x26, paper lined.....\$ 8 15  
28x28, " " 9 10  
30x30, " " 10 80

### Wash.

No. 760, Banner Globe  
(single) .....per doz. \$5 25  
No. 652, Banner Globe  
(single) .....per doz. 6 75  
No. 801, Brass King, per doz. 8 25  
No. 860, Single—Plain  
Pump ..... 6 25

### BOLTS.

Carriage, Machine, etc.  
Carriage, cut thread, 1/4x6  
and sizes smaller and  
shorter .....60%  
Carriage sizes larger and  
longer than 1/4x6.....50-10%  
Machine, 1/4x4 and sizes  
smaller and shorter...60-10%  
Machine, sizes larger and  
longer than 1/4x4.....50-5%  
Stove .....75-10%

### Mortise, Door.

Gem, iron .....5%  
Gem, bronze plated..... 5%

### Barrel.

Cast .....Net  
Wrought .....  
Wrought, bronzed..... "



<b>Flash.</b>	
Wrought .....	Net
<b>Spring.</b>	
Wrought .....	"
Wrought, heavy .....	"

<b>Square.</b>	
Wrought .....	"

<b>BOXES.</b>	
Mall. No. 3	4 10
Per doz. \$15 00	\$23 00 \$29 00
Cast Iron.	
Per doz. ....	\$9 50
<b>Mitre.</b>	
Stanley's .....	Net Prices
Stearns, No. 2 ..	per doz. \$48 00

<b>BRACES, RATCHET.</b>	
Goodell-Pratt No. 403 .....	\$4 60
" " No. 410 .....	4 80
" " No. 412 .....	5 00
V. & B. No. 444 8 in. ....	4 65
V. & B. No. 323 8 in. ....	4 30
V. & B. No. 222 8 in. ....	4 00
V. & B. No. 111 8 in. ....	3 50
V. & B. No. 11 8 in. ....	3 05

<b>BURRS, RIVETING.</b>	
Copper Burrs only ..	30% above list
Tinners' Iron Burrs only ..	Net

<b>BUTTS.</b>	
Steel, antique copper or dull brass finish—case lots—	
3 1/2 x 3 1/2 ... per dozen pairs	\$2 75
4 x 4 .....	2 80
Heavy Bevel steel inside sets, case lots—	
..... per dozen sets	7 50
Steel bit keyed front door sets, each .....	1 80
Wrought brass bit keyed front door sets, each ..	2 25
Cylinder front door sets, each .....	7 00

<b>CALIPERS.</b>	
Double .....	Net
Inside and Outside .....	"
Wing .....	"

<b>CANS.</b>	
<b>Milk.</b>	
Ohio.	
Gals. .... 5	8 10
Each .... \$3 65	\$4 45 \$4 70
<b>Gem.</b>	
Gals. .... 5	8 10
Each .... \$3 35	\$4 95 \$5 20
<b>Jersey or Holstein.</b>	
Gals. .... 5	8 10
Each .... \$4 15	\$5 60 \$5 90

<b>CAN OPENERS.</b>	
See openers.	

<b>CARRIERS.</b>	
<b>Hay.</b>	
Diamond, Regular ..	each, Nets
Diamond, Sling .....	" "

<b>CARTRIDGES.</b>	
See Ammunition.	

<b>CASTERS.</b>	
Standard—Ball Bearing,	
.....	50 & 10%
Bed .....	40%

<b>Common Plate.</b>	
Brass Wheel .....	15%
Iron and porcelain wheels, new list ..	50%
Philadelphia Plate, new list ..	50%
Martin's .....	40%

<b>CATCHERS, GRASS.</b>	
No. 1608 .....	per doz. \$12 35
No. 1658 .....	" 14 01

<b>CEMENT, FURNACE.</b>	
American Seal, 5 lb. cans, net	\$0 45
" " 10 lb. cans, " "	90
" " 25 lb. cans, " "	1 87
Asbestos, 5 lb. cans ..	45
Pecora, 5 lb. cans ..	45
" 10 lb. cans ..	90
" 25 lb. cans ..	1 87

<b>CHAINS.</b>	
<b>Breast Chains.</b>	
With Slide .....	doz. pairs, \$5 50
Without Slide ..	5 00
Doubleslack ..	9 35
With Covert Snaps ..	6 35

<b>Picture Chains.</b>	
Light brass, 3 ft. per doz.	1 25
Heavy brass, 3 ft. ..	1 75

<b>Sash Chain.</b>	(Morton's)
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<b>Steel, per 100 ft.</b>	
0 .....	\$2 50
2 .....	3 10
1 .....	3 60

<b>Champion Metal.</b>	
0R .....	5 40
2R .....	5 60
1R .....	7 75

<b>Champion Metal—Extra Heavy.</b>	
1H .....	\$9 50

<b>Cable Sash Chains.</b>	
Steel .....	List Net Plus 15%

<b>CHALK, CARPENTERS'.</b>	
Blue .....	per gro. \$2 00
Red .....	2 00
White .....	1 80
Common White School Crayon .....	0 30

<b>CHIMNEY TOPS.</b>	
In bags .....	per bag \$1 80

<b>CHECKS, DOOR.</b>	
Corbin .....	Net list
Russwin .....	Net list

<b>CHISELS.</b>	
Cold.	
Good quality, 1/2 in., each	\$0 44
" " 3/4 in., " "	0 23

<b>Diamond Point.</b>	
V. & B. No. 15, 1/4 in. ....	0 22
V. & B. No. 15, 3/4 in. ....	0 43

<b>FIRMER BEVELLED.</b>	
Berg's (Swedish).	
1/2-inch .....	per doz. \$ 4 45
1 " .....	7 15
1 1/2 " .....	10 15
2 " .....	17 15
2 1/2 " .....	26 95

<b>Round Nose.</b>	
V. & B. No. 65, 1/4 in. ....	0 22
V. & B. No. 65, 3/4 in. ....	0 44

<b>SOCKET FIRMER.</b>	
Berg's (Swedish).	
1/2-inch .....	per doz. \$11 95
1 " .....	16 75
1 1/2 " .....	22 95
2 " .....	35 95

<b>Cape.</b>	
V. & B. No. 50, 1/4 in. ....	0 20
V. & B. No. 50, 3/4 in. ....	0 64

<b>CHUCKS, DRILL.</b>	
Goodell's, for Goodell's Screw Drivers .....	List less 35-40%
Yankee, for Yankee Screw Drivers .....	\$6 00

<b>CHURNS.</b>	
Anti-Bent Wood,	
Gal. .... 5	7 10
Each .... \$3 00	4 60 4 85
Belle, Barrel .....	65 & 7 1/2%
Common Dash,	
Gal. .... 5	7 10
Per doz. ....	\$17 00 19 00

<b>CLAMPS.</b>	
Adjustable.	
Martin's .....	30%
No. 63, Screw .....	30%

<b>Cabinet.</b>	
Screw .....	30%

<b>Carpenters'.</b>	
Steel Bar ..	List price plus 20%

<b>Carriage Makers'.</b>	
2 1/2-inch .....	per doz. \$ 7 00
5 " .....	14 00
8 " .....	23 00
12 " .....	42 00

<b>Quilt Frame.</b>	
No. 30, Ball and Socket,	
2 1/2-in. head ..	per gross \$13 00
No. 50 Ball and Socket,	
3 1/2-in. head ..	per gross 14 50

<b>Hose.</b>	
Sherman's, brass, 1/2-inch,	
per doz. ....	\$0 43
Double, brass, 1/2-inch, per doz. ....	1 20

<b>Saw Filers.</b>	
Wentworth's, No. 1, \$12.50; No. 2, \$18.25; No. 3, \$16.25.	

<b>CLAWS, TACK.</b>	
Wood hdl. No. 10 ..	per doz. \$1 15
Forged steel, wood hdl. " "	2 15
Solid steel .....	3 25
Giant .....	50

<b>CLEAVERS.</b>	
<b>Family.</b>	
Beatty's,	
inch .. 7	8 9 10
Per doz. ....	\$25 10 27 50 30 50 33 50

<b>CLEAVISES.</b>	
Malleable .....	10c lb.

<b>CLIPPERS.</b>	
<b>Bolt (Carolus).</b>	
No. 0 .....	\$2 50
No. 1 .....	3 25
No. 3 .....	4 25

<b>CLIPS.</b>	
Axle .....	65 @ 5%

<b>Damper.</b>	
Standard .....	per doz. 70c
Troy .....	35c
Hame .....	50c

<b>COLLARS, STOVE PIPE.</b>	
<b>Lacquered.</b>	
Inches .....	5 6 7
Fancy pattern,	
per doz. ....	65c 75c \$1 00

<b>COMPASSES.</b>	
Carpenters' .....	15%

<b>COPPERS—Soldering.</b>	
<b>Pointed Roofing.</b>	
3 lb. and heavier ..	per lb. 40c
2 lb. ....	45c
2 1/2 lb. ....	45c
1 1/2 lb. ....	55c
1 lb. ....	60c

<b>CORD.</b>	
<b>Picture.</b>	
White Wire .....	60 & 5%
<b>Sash.</b>	
Spot, No. 7 .....	per lb. 65c
Common, No. 7 .....	40c

<b>COTTERS, SPRING.</b>	
All sizes .....	37 1/2%

<b>COUPLINGS, HOSE.</b>	
Brass .....	per doz. \$2 25

<b>CRADLES, GRAIN.</b>	
Morgan's Grapevine ..	per doz. \$45 00

<b>CUT-OFFS.</b>	
Standard gauge .....	35%
26 gauge .....	20%

<b>CUTTERS.</b>	
<b>Glass.</b>	
Red Devil .....	Net

<b>Meat.</b>	
Enterprise—Nos. 5	10 12
Each .... \$2 50	\$4 25 \$5 75
Nos. 22	23
..... \$6 50	\$8 50

<b>Pipe.</b>	
Saunders, Nos. 1	2 3
Each .....	\$1 35 2 75 6 75

<b>Slaw and Kraut.</b>	
4-knife Kraut .....	per doz. \$20 00-55 00

<b>3-knife Kraut,</b>	
8x27 in. ....	12 00-13 00

<b>1-knife Slaw .....</b>	
2-knife Slaw .....	3 00

<b>Washer .....</b>	
	11 00

<b>DAMPERS, STOVE PIPE.</b>	
<b>Diamond.</b>	
6-inch .....	per doz. \$1 50

<b>DIGGERS.</b>	
<b>Post Hole.</b>	
Eureka .....	per doz. \$15 75

<b>Iwan's Split Handle</b>	
(Eureka)	

<b>4-ft. Handle ..</b>	
7-ft. Handle ..	per doz. 30 00

<b>Iwan's Hercules pattern,</b>	
per doz. ....	18 00

<b>Dividers, Wing .....</b>	
	25%

<b>DRILLS.</b>	
<b>Beach.</b>	
Blacksmiths' Twist (New List) .....	40%

<b>Breast.</b>	
Millers Falls No. 12, per doz. ....	\$52 50
Millers Falls No. 112, per doz. ....	32 00

<b>Hand.</b>	
Goodell's Automatic.	
No. 01 .....	each \$1 00
No. 02 .....	" 2 00
Goodell-Pratt No. 4 1/2, each	3 00
Goodell-Pratt No. 373, " "	4 00

<b>Reciprocating.</b>	
Goodell's .....	" 2 20

DRIVERS, SCREW.	
Standard .....	Nets
Lock Ferrule .....	"
Clark's Interchangeable....	"
Goodell's Spiral.....	"
Yankee Ratchet .....	"
" Spiral .....	"

<b>EAVES TROUGH.</b>	
75-10% off Standard List.	
Milcor .....	Net

<b>ELBOWS—Conductor Pipe.</b>	
Galvanized Steel, Tin and Terra.	
Plain Round or Round Corrugated.	
2 to 6 inch, Std. gauge ..	60-10-5%
2 to 6 inch, 26 gauge ..	40-10-5%
2 to 6 inch, 24 gauge ..	15-10-5%
Milcor .....	Net

<b>Square Corrugated.</b>	
Standard gauge .....	45-10-5%
26 gauge .....	30-10-5%
Milcor .....	Net

<b>ELBOWS—Stove Pipe.</b>	
<b>1-piece Corrugated, Uniform.</b>	
Doz.	
5-inch .....	\$1 45
6-inch .....	1 50
7-inch .....	2 00

<b>Uniform, Collar Adjustable.</b>	
Doz.	
5-inch .....	\$1 00
6-inch .....	2 00
7-inch .....	2 40

<b>ENAMEL.</b>	
Per doz.	

<b>Black Silk Air Drying.</b>	
No. 1, 1/4 pt. can with brush .....	\$1 92
No. 2, 1 pt. can with brush	2 80
<b>Wire Screen Enamel.</b>	
Black Silk (Black only).	

<b>Per doz.</b>	
1/4 pt. friction top can ..	\$2 00
1 pt. friction top can ..	2 00
1 qt. friction top can ..	5 40

<b>FACES, WOOD.</b>	
50% off list.	

<b>FASTENERS, STORM SASH.</b>	
Schroeder's .....	per doz. \$1 50
Sensible .....	" 2 00

<b>FENCING.</b>	
Lawn fence, single space,	
36-inch .....	\$ 9 12
Lawn fence, single space,	
42-inch .....	10 20
Lawn fence, double space,	
36-inch .....	12 50
Lawn fence, double space,	
42-inch .....	13 75
Field fence, 26-inch, No. 10	
top and bottom 12 filling	26 50
Same, 6 filling .....	33 00
Field fence, 32-inch, No. 10	
top and bottom 12 filling	30 00
Same, 6 filling .....	39 43

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<b>GALVANIZED WARE.</b>		<b>HANDLES.</b>		<b>Screw Hook and Strap.</b>		<b>KETTLES.</b>	
Pails (Competition), 8-qt.	Per doz. \$2 00	Agricultural Tool.		6 to 12 in. per 100 lbs.	\$7 75	Brass	15%
10-qt.	2 35	4 1/2-inch, plain.	per doz. \$3 50	14 to 20 in.	" 7 50	Cauldron	40&5%
12-qt.	2 50			22 to 36 in.	" 7 25	Copper	per lb. 37
14-qt.	2 30	<b>Auger.</b>				Maslin	40&10%
Wash tubs, No. 1.	6 50	Common Assorted, per doz.	\$0 75	<b>Screw Hook and Eye.</b>		Sugar	50%
No. 2.	7 50	Pratt's Adjustable, Nos.	4 00	1/4 in. per doz. pair	\$2 00		
No. 3.	8 50	1 & 2, per doz.	4 00	1/2 in.	" 1 50		
		Ives' Adjustable, per set	1 35	3/4 in.	" 5 00		
<b>GARAGE DOOR HARDWARE.</b>		<b>Axe.</b>				<b>KNIVES.</b>	
Stanley	All net	Hickory, No. 1.	per doz. 4 00	<b>HOES.</b>		Beet Topping.	
<b>GAUGES.</b>		Hickory, No. 2.	2 50	Garden	Net	Clyde, 9-in. Scimitar Blade,	
Cream Fall.		1st quality, second growth	6 00			doz.	25%
Fairmount	per doz. \$3 75	Special white, 2nd growth.	5 00			California	25%
Marking, Mortise, etc.	Net			<b>HOOKS.</b>		Butcher.	
Wire.		<b>Chisel.</b>		Awning, No. 60.	Net	Beechwood Handles, 6-inch	
Disston's	25%	Hickory, Tanged, Firmer,		Belt.		blade	25%
<b>GIMLETS.</b>		Assorted	per doz. 55c	Brown's	70&5%	Beechwood Handles, 7-inch	
Discount	65% and 10%	Hickory, Socket Firmer,	per doz. 70c	Jones'	65&5%	blade	25%
<b>GLASS.</b>		Assorted	per doz. 70c			Beechwood Handles, 8-inch	
Single Strength, A and B,		Coal Pick	40%			blade	25%
all sizes	81%	Drifting Pick	40%			Cooper's Hoop	25%
Double Strength, A and B,		File, assorted	per doz. 30c				
all sizes	83%						
<b>GLOVES.</b>		<b>Hammer and Hatchet.</b>					
6-oz. knit wrist gloves	per doz. \$1 00	No. 1, per doz.	\$0 80				
8-oz. knit wrist gloves	1 20	Second growth hickory, per	doz. 1 40				
10-oz. knit wrist gloves	1 45						
<b>GLUE.</b>		<b>Hay and Manure Fork, Han-</b>					
Bulk.		dles, Strap and Ferrule.	per doz. \$7 00				
B Amber	per lb. 35c						
A white	" 40c	<b>Screw Driver.</b>					
H. S. Amber	" 35c	Assorted	each 6c				
<b>Liquid.</b>		<b>Shovel and Spade.</b>	Net				
Army & Navy	40%						
Le Page's							
List "A"	37 1/2%						
List "B"	35%						
List "C"	25%						
<b>GREASE, AXLE.</b>		<b>HANGERS.</b>					
Wood Boxes.		Matchless	Net				
Frazer's	per gro. \$13 00	Reliable	Net				
Hub Lightning	7 50	Richards	25%				
Wood Pails.		<b>Garage Door.</b>					
Frazer's, 15 lb. \$1.00; 25 lb. \$1.50		(See Garage Door Hdw.)					
Hub Lightning, 15 lb. 90c; 25 lb. \$1.21							
<b>GRINDSTONES.</b>		<b>Conductor Pipe.</b>					
Family.		Iwan's Perfection	50%				
Inches 7 8 10 12		Milcor Perfection	Net				
Prices on application.							
<b>Mounted.</b>		<b>Eaves Trough.</b>					
Ball Bearing	1 2 3	Steel hangers	30%				
Prices on application.		Triple twist wire	10%				
<b>GUNS.</b>		Milcor Eclipse	Net				
Iver Johnson Champion Single		Milcor Triplex	Net				
Barrel Shot Guns	Net	Milcor Milwaukee	Net				
Double Barrel, Hammerless							
<b>HAFTS, AWL.</b>		<b>HASPS.</b>					
Brad.		Hinge, Wrought, with staples	Net				
Common	per doz. \$0 25						
<b>Peg.</b>		<b>HATCHETS.</b>					
Patent, plain top	" 60	Size No. 2 extra quality					
Patent, leather top	" 30	broad	\$19 00				
<b>Sewing.</b>		Competitive Grade	13 00 up				
Common	" 24	No. 2 Warranted Shingling	14 35				
Patent	" 55	Competitive Forged	5 50				
<b>HAMMERS, HANDLED.</b>		<b>HAY RACK BRACKETS.</b>					
Blacksmiths, Hand, No. 6,		Wenzleman's No. 1					
26 oz.	\$1 35	per doz. sets	\$18 00				
Engineers', No. 1, 26 oz.	1 35	Wenzleman's No. 2					
Farriers', No. 7, 7 oz.	1 41	per doz. sets	19 20				
Machinists', No. 1, 7 oz.	1 05						
<b>Nail.</b>		<b>HINGES.</b>					
Vanadium, No. 4 1/4, 16 oz.	each 1 56	Blind.					
V. & B., No. 1 1/4, 16 oz.	each 1 13	Clark's Gravity					
Garden City, No. 1 1/4, 16 oz.	each 94	No. 1	per set 45c				
		No. 2	" 38c				
<b>Tinner's Riveting, No. 1, 8 oz., each</b>		<b>Gate.</b>					
	20	Clarks	1 2 3				
<b>Shoe, Steel, No. 1, 13 oz., each</b>		Hgs & Lch, ea.	85c 1 10 2 40				
	73	Hinges only—					
<b>Tack.</b>		Upper	\$1 25				
Magnetic.		Lower	1 55				
No. 6, each	1 00	Latches only—					
		No. 1	each 28c				
<b>HAMMERS, HEAVY.</b>		No. 2	" 28c				
Farriers'	20%	<b>Screen Door.</b>					
Masons'		1751—3x3	doz. \$2 00				
Single and Double Face	50%	1753—2 1/4x2 1/4	" 1 95				
		<b>Spring.</b>					
		Chicago	Add 10% to list				
		Gem	25%				
		Matchless	40%				
		New Idea	per gross \$6 90				
		<b>Wrought Iron.</b>					
		Per 100 pairs with screws:					
		Light Strap Hinges, No. 3	\$12 00				
		Heavy Strap Hinges, No. 4	15 75				
		Light T Hinges, No. 3	12 10				
		Heavy T Hinges, No. 4	20 00				
		Extra Heavy T Hinges,					
		No. 4	21 50				



<b>LINING, STOVE.</b> Bricks .....per crate 43c	<b>NIPPERS.</b> End Cutting. Berg's (Swedish) In. 5 6 Per dozen.....\$12 60 15 20	<b>PAPERS.</b> Apple. Goodell's .....per doz. \$10 80 Turntable ..... " 11 40 White Mountain " 8 40 Reading No. 78 " 11 40	<b>Lineman's Side Cutting.</b> Berg's (Swedish), In. 6 7 8 Blk. Pol. Face, doz. ....\$10 70 20 00 23 35
<b>LOCKS.</b> Barn Door. No. 60 Stearns...per doz. \$12 00 No. 39 " " " 24 00	End and Diagonal Cutting. Berg's (Swedish) In. 5 6 Per dozen.....\$10 05 13 00	<b>Potato.</b> Goodell's Saratoga, 10 1/4 in., doz. .... 6 50 Goodell's Saratoga, 5 in., doz. .... 5 50	Long Nose Side Cutting. Berg's (Swedish) In. 5 6 Blk. Pol. Face, doz. \$12 25 15 20
<b>MACHINES.</b> Riveting. Stearns No. 1...per doz. \$16 00	<b>HOOF.</b> Heller's .....40&10% V. & B., No. 52, each.....\$2 25	<b>PICKS.</b> Adse Eye Ore.....22 1/2 % Drifting and Poll Picks.....22 1/2 % Plumbs, Railroad .....22 1/2 % Surface .....22 1/2 %	Flat and Round Nose. Berg's (Swedish) Flat, In. 4 6 8 Blk. Pol. Face, Doz. ....\$8 90 13 35 19 65
<b>Tenoning.</b> No. 50 Peace's Spoke, each \$16 00	<b>NOZZLES.</b> Hose. Magic .....per doz. \$9 50 Diamond ..... " 5 75	<b>PINCERS.</b> Carpenters', cast steel, No. .... 6 8 10 12 Each \$0 56 \$0 72 \$0 93 \$1 03 Blacksmiths', No. 10.....\$0 96 Heller's .....List plus 10%	Berg's (Swedish) Round, In. 4 6 8 Blk. Pol. Face Dca. .... \$11 15 16 30 23 35
<b>MAIL BOXES.</b> See Boxes.	<b>NUTS, HOT PRESSED.</b> Square Tapped. \$2.41 off per 100 lbs.	<b>PINS.</b> Clothes. Common, per box of 5 gro. \$0 95	<b>POINTS, GLAZIERS.</b> No. 1, 2 and 3.....per doz. 75c
<b>MALLETS.</b> Carpenters'. Fibre Head, No. 2 per doz. \$16 50 " No. 3 " 19 50 " No. 4 " 28 50	Hexagon Tapped. \$2.41 off per 100 lbs.	<b>PICKET.</b> Fluted, 15-in.....per doz. \$1 10 Fluted, 21-in..... " 1 60 Spiral ..... " 1 90	<b>POINTERS, SPOKE.</b> Stearns' No. 1.....per doz. \$10 00 " No. 2..... " 12 00
Round Hickory .....per doz. \$3 00—5 00 Round Lig-numvitae " 6 25—10 50 Square Hickory " 3 50—5 50 Square Lig-numvitae " 8 00—12 00	<b>OILERS.</b> Chase Pattern. Brass and Copper.....10% Zinc .....20%	<b>PIPE.</b> Conductor. Plain Round and Round Corrugated. 29 Gauge .....55% 28 " .....45% 26 " .....35% 24 " .....10%	<b>POKERS, STOVE.</b> Wr't Steel, str't or bent, .....per doz. \$0 75 Nickel Plated, coil han's " 1 10
<b>FINNERS.</b> Hickory .....per doz. \$2 25	Railroad. Coppered .....33 1/2 % Steel. Copper Plated .....50-10-5%	Square Corrugated A and B and Octagon. 29 Gauge .....40% 28 " .....40% 26 " .....30% 24 " .....10%	<b>POLISH.</b> Metal. Per doz. Black Silk No. 60—6 oz...\$ 1 50 Black Silk No. 70—1 p... 3 00 Black Silk No. 80—1 q... 5 00 Black Silk No. 90—1 gal. 12 00
<b>MATS.</b> Door. National Rigid.....5&10&5% Acme Steel Flexible.....50%	<b>OPENERS.</b> Can. Delmonico .....per doz. \$1 30 Never Slip..... " 65	Galvanized Toncan Metal, Genuine O. H. Iron, Lyonmore Metal, Charcoal Iron and Keystone C. B. Plain Round and Round Corrugated. 29 Gauge .....40% 26 " .....35% 24 " .....10%	<b>STOVE.</b> Black Silk No. 5 paste, 5 oz. can .....\$ 1 20 Black Silk No. 10 paste, 1/2 lb. can..... 2 00 Black Silk No. 10A paste, (fireproof), 1 1/2 lb. can. 1 50 Black Silk No. 15 paste, 1 lb. can ..... 3 00 Black Silk No. 20 paste, 5 lb. can..... 11 40 Black Silk No. 6 liquid, 6 oz. can ..... 1 35 Black Silk No. 8 liquid, 1/2 pt. can..... 2 00 Black Silk No. 12 liquid, 1 pt. can..... 3 00
<b>MAULS.</b> Wood Choppers'. Lake Superior & Oregon pat. ....40&5%	<b>OUTFITS, COBBLING.</b> Combination .....per doz. \$16 00 Economy ..... " 8 50 Family ..... " 14 50	<b>STOVE.</b> 14-qt. without gauge .....per doz. \$9 50 18-qt. without gauge, .....per doz. 11 00 20-qt. without gauge, .....per doz. 11 75	<b>PRESSES, FRUIT AND JELLY</b> Enterprise Manufacturing Co. 25%
<b>MEASURES.</b> Galvanized, doz.....Nets Japanned, doz.....Nets	<b>PAILS.</b> Cream. 14-qt. without gauge .....per doz. \$9 50 18-qt. without gauge, .....per doz. 11 00 20-qt. without gauge, .....per doz. 11 75	<b>STOVE.</b> 14-qt. without gauge .....per doz. \$9 50 18-qt. without gauge, .....per doz. 11 00 20-qt. without gauge, .....per doz. 11 75	<b>PRUNERS.</b> Daston's Pole.....per doz. \$18 00 Water's Improved, per doz. 60%
<b>MITRES.</b> Galvanized steel mitres, end caps, end pieces, outlets.....30% Milcor .....Net	<b>PANS.</b> Dripping .....Net	<b>STOVE.</b> 26 gauge, 5 inch E. C. nested .....\$14 50 26 gauge, 6 inch E. C. nested ..... 15 50 26 gauge, 7 inch E. C. nested ..... 17 50 28 gauge, 5 inch E. C. nested ..... 12 50 28 gauge, 6 inch E. C. nested ..... 13 50 28 gauge, 7 inch E. C. nested ..... 15 50 30 gauge, 5 inch E. C. nested ..... 11 00 30 gauge, 6 inch E. C. nested ..... 12 00 30 gauge, 7 inch E. C. nested ..... 14 00 T-Joint Made up. 6-inch .....per 100 \$40 00	<b>PULLERS.</b> Cork. Daisy .....each \$3 10 Phoenix ..... " 1 40 Quick and Easy..... " 2 70
<b>MOPS.</b> Cotton, Star (Cut Ends). Pounds 12' 15' 18' 24'-3-oz. Per doz. \$4 00 4 35 5 50 7 00 Enterprise .....15&5% Parker .....50&5%	<b>ROASTING.</b> Paxton. Nos. .... 1 2 3 4 Per doz. ....Nets Neverburn ..... Savory, No. 200..per doz. \$8 40	<b>STOVE.</b> 26 gauge, 5 inch E. C. nested .....\$14 50 26 gauge, 6 inch E. C. nested ..... 15 50 26 gauge, 7 inch E. C. nested ..... 17 50 28 gauge, 5 inch E. C. nested ..... 12 50 28 gauge, 6 inch E. C. nested ..... 13 50 28 gauge, 7 inch E. C. nested ..... 15 50 30 gauge, 5 inch E. C. nested ..... 11 00 30 gauge, 6 inch E. C. nested ..... 12 00 30 gauge, 7 inch E. C. nested ..... 14 00 T-Joint Made up. 6-inch .....per 100 \$40 00	<b>PULLERS.</b> Cork. Daisy .....each \$3 10 Phoenix ..... " 1 40 Quick and Easy..... " 2 70
<b>NAILS.</b> Cut Steel.....\$4 25 Cut Iron..... 4 45 Wire. Common ..... 3 65 Cement Coated, Small Lots..... 4 30	<b>ROASTING.</b> Paxton. Nos. .... 1 2 3 4 Per doz. ....Nets Neverburn ..... Savory, No. 200..per doz. \$8 40	<b>STOVE.</b> 26 gauge, 5 inch E. C. nested .....\$14 50 26 gauge, 6 inch E. C. nested ..... 15 50 26 gauge, 7 inch E. C. nested ..... 17 50 28 gauge, 5 inch E. C. nested ..... 12 50 28 gauge, 6 inch E. C. nested ..... 13 50 28 gauge, 7 inch E. C. nested ..... 15 50 30 gauge, 5 inch E. C. nested ..... 11 00 30 gauge, 6 inch E. C. nested ..... 12 00 30 gauge, 7 inch E. C. nested ..... 14 00 T-Joint Made up. 6-inch .....per 100 \$40 00	<b>PULLERS.</b> Cork. Daisy .....each \$3 10 Phoenix ..... " 1 40 Quick and Easy..... " 2 70
<b>NAIL FULLERS.</b> See Pullers.	<b>ROASTING.</b> Paxton. Nos. .... 1 2 3 4 Per doz. ....Nets Neverburn ..... Savory, No. 200..per doz. \$8 40	<b>STOVE.</b> 26 gauge, 5 inch E. C. nested .....\$14 50 26 gauge, 6 inch E. C. nested ..... 15 50 26 gauge, 7 inch E. C. nested ..... 17 50 28 gauge, 5 inch E. C. nested ..... 12 50 28 gauge, 6 inch E. C. nested ..... 13 50 28 gauge, 7 inch E. C. nested ..... 15 50 30 gauge, 5 inch E. C. nested ..... 11 00 30 gauge, 6 inch E. C. nested ..... 12 00 30 gauge, 7 inch E. C. nested ..... 14 00 T-Joint Made up. 6-inch .....per 100 \$40 00	<b>PULLERS.</b> Cork. Daisy .....each \$3 10 Phoenix ..... " 1 40 Quick and Easy..... " 2 70
<b>NAIL SETS.</b> See Sets.	<b>ROASTING.</b> Paxton. Nos. .... 1 2 3 4 Per doz. ....Nets Neverburn ..... Savory, No. 200..per doz. \$8 40	<b>STOVE.</b> 26 gauge, 5 inch E. C. nested .....\$14 50 26 gauge, 6 inch E. C. nested ..... 15 50 26 gauge, 7 inch E. C. nested ..... 17 50 28 gauge, 5 inch E. C. nested ..... 12 50 28 gauge, 6 inch E. C. nested ..... 13 50 28 gauge, 7 inch E. C. nested ..... 15 50 30 gauge, 5 inch E. C. nested ..... 11 00 30 gauge, 6 inch E. C. nested ..... 12 00 30 gauge, 7 inch E. C. nested ..... 14 00 T-Joint Made up. 6-inch .....per 100 \$40 00	<b>PULLERS.</b> Cork. Daisy .....each \$3 10 Phoenix ..... " 1 40 Quick and Easy..... " 2 70
<b>NETTING, POULTRY.</b> Galvanized before weaving...50% Galvanized after weaving...40%	<b>ROASTING.</b> Paxton. Nos. .... 1 2 3 4 Per doz. ....Nets Neverburn ..... Savory, No. 200..per doz. \$8 40	<b>STOVE.</b> 26 gauge, 5 inch E. C. nested .....\$14 50 26 gauge, 6 inch E. C. nested ..... 15 50 26 gauge, 7 inch E. C. nested ..... 17 50 28 gauge, 5 inch E. C. nested ..... 12 50 28 gauge, 6 inch E. C. nested ..... 13 50 28 gauge, 7 inch E. C. nested ..... 15 50 30 gauge, 5 inch E. C. nested ..... 11 00 30 gauge, 6 inch E. C. nested ..... 12 00 30 gauge, 7 inch E. C. nested ..... 14 00 T-Joint Made up. 6-inch .....per 100 \$40 00	<b>PULLERS.</b> Cork. Daisy .....each \$3 10 Phoenix ..... " 1 40 Quick and Easy..... " 2 70
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<b>NETTING, POULTRY.</b> Galvanized before weaving...50% Galvanized after weaving...40%	<b>ROASTING.</b> Paxton. Nos. .... 1 2 3 4 Per doz. ....Nets Neverburn ..... Savory, No. 200..per doz. \$8 40	<b>STOVE.</b> 26 gauge, 5 inch E. C. nested .....\$14 50 26 gauge, 6 inch E. C. nested ..... 15 50 26 gauge, 7 inch E. C. nested ..... 17 50 28 gauge, 5 inch E. C. nested ..... 12 50 28 gauge, 6 inch E. C. nested ..... 13 50 28 gauge, 7 inch E. C. nested ..... 15 50 30 gauge, 5 inch E. C. nested ..... 11 00 30 gauge, 6 inch E. C. nested ..... 12 00 30 gauge, 7 inch E. C. nested ..... 14 00 T-Joint Made up. 6-inch .....per 100 \$40 00	<b>PULLERS.</b> Cork. Daisy .....each \$3 10 Phoenix ..... " 1 40 Quick and Easy..... " 2 70

PUTTY.	
Commercial Putty, 100-lb. kits .....	\$4 75
RAIL.	
Barn Door.	
Matchless, 1-in. ....	5c
Matchless, 1 1/4-in. ....	7c
Storm King .....	5c
Sliding Door.	
Bronzed wrought iron, .....	per ft. 3 1/4c
RAKES.	
Garden.	Per doz.
Steel, Bow, 12-in. Teeth.....	\$3 50
Steel, Bow, 14-inch .....	3 25
Malleable Iron, 12-in. ....	4 75
Malleable Iron, 14-in. ....	5 00
Hay.	
Wood, 10 Teeth.....	\$4 00
Lawn.	
20 Teeth .....	per doz. 5 50
RAZORS—SAFETY.	
Gillette .....	per doz. \$45 00
Auto Strop .....	45 00
Gem .....	4 40
Gem (3 doz. lots) ..	3 00
Ever Ready .....	4 40
Ever Ready (3 dz. lots) ..	3 00
RAZORS—STRAIGHT.	
RAZOR STROPS.	
Star (Honing) .....	50%
REGISTERS.	
Cast Iron .....	20%
Steel and Semi-Steel.....	30%
Baseboard .....	30%
Adjustable Ceiling Ventilators	30%
REGISTER FACES.	
Japanned, Bronzed and Plated.	
4x6 to 14x14.....	30%
14x14 to 38x42.....	50%
REVOLVERS.	
Iver Johnson Safety Automatic Hammer .....	Net
Hammerless .....	"
L. J. Model 199.....	"
RIDGE ROLL.	
Galvanized.	
Crated .....	70-75%
Wired .....	70-75-5%
Milcor .....	Net
RINGS AND RINGERS.	
Full.	
Copper .....	2 1/4-in. 2-in.
Per doz.....	\$2 40 \$2 65
Rea's Improved Self-Piercing copper.	
..... doz. 3 40	
Steel, per doz.....	1 50 1 80
Hog.	
Blair's Rings.....	per doz. \$ 75
Blair's Ringers.....	" 1 00
Brown's Ringers.....	" 72
Brown's Ringers.....	" 1 00
Hill's Ringers.....	" 1 00
Hill's Ring, boxes ..	72
Major Rings .....	60
Perfect Ringers.....	1 50
Wolverine Rings.....	1 10
Wolverine Ringers ..	1 10
Fruit Jar.	
White .....	per lb. 30
Key.	
Split, round.....	per doz. \$0 17
Split, square.....	" 22
Ball, round.....	" 40
RIVETS.	
Copper Belt.....	Add 15% to list
Coppered Iron .....	30%
Tinners' .....	30%
Same.....	per lb. \$0 17
Settled Clinch .....	per doz. 60 @ 1 10
Tubular.	
No. 1 and 2 assorted sizes,	
50 in box.....	doz. 75c
No. 1 and 2 assorted sizes,	
10 in box.....	doz. 1 40
ROPE.	
Cotton.	
1/4, 5-16 in. Com. on reels,	
per lb. ....	80c
1/4, 5-16 in. Com. in coils,	
per lb. ....	80c
Steel.	
1st Quality, base 12 1/2c to 13 1/2c	
No. 2.....	11c to 11 1/2c
Manila.	
1st Quality standard	
brands .....	16 1/2c to 17 1/2c
No. 2.....	15c to 15 1/2c
Pure Manila.	
1st quality, base, per lb.	
.....	17 1/2c to 18 1/2c
Hardware Grade, per lb.	11 1/2c

SAWS.	
Butchers'.	
Atkins No. 2, 14-in.....	\$12 20
" No. 2, 18-in.....	13 70
" No. 2, 22-in.....	15 25
" No. 7, 16-in.....	15 20
" No. 7, 20-in.....	17 25
" No. 7, 24-in.....	19 25
" No. 7, 28-in.....	21 40
Disston's No. 2, 14-in.....	15 20
" No. 2, 18-in.....	15 50
" No. 2, 22-in.....	20 25
" No. 7, 16-in.....	20 00
" No. 7, 20-in.....	21 25
" No. 7, 24-in.....	23 25
" No. 7, 28-in.....	26 00
Compass.	
Atkins No. 2, 10-in.....	\$ 4 95
" No. 10, 10-in.....	5 10
" Blades, No. 2, 10 in.	2 25
" No. 2, 10-in.....	2 00
Disston's No. 20 Jackson.	4 00
" No. 40 Sampson ..	2 00
" No. 2 & 77, 10-in.	6 05
" No. 3, 10-in.....	6 80
Cross-Cut.	
Atkins No. 221, 4-ft.....	2 70
" No. 221, 6-ft.....	4 10
" No. 221, 8-ft.....	5 45
Disston's No. 229, 4-ft.....	2 35
" No. 229, 6-ft.....	6 15
" No. 229, 8-ft.....	10 65
Flooring.	
Atkins No. 96, 16-in.....	19 95
" No. 96, 20-in.....	21 25
Disston's D19, 16-in.....	24 50
" D19, 20-in.....	31 00
Hand and Rip.	
Atkins No. 54, 20-in.....	17 75
" No. 54, 26-in.....	22 10
" No. 53, 16-in.....	16 45
" No. 53, 20-in.....	20 80
" No. 53, 24-in.....	24 20
" No. 53, 28-in.....	28 60
Disston's No. 7, 20-in.....	19 25
" No. 7, 22-in.....	25 40
" No. 8, 16-in.....	17 55
" No. 8, 20-in.....	20 75
" No. 8, 24-in.....	24 40
" No. 8, 28-in.....	29 50
" No. 8, 30-in.....	32 95
Keyhole.	
Atkins No. 1, complete...	2 80
" No. 2, complete...	3 35
Disston's No. 5, complete	3 25
" No. 10, complete ..	3 70
" No. 95, complete ..	5 75
Miter Box.	
Atkins No. 1, 4x20.....	29 70
" No. 1, 5x22.....	34 55
" No. 1, 6x22.....	38 35
Disston's No. 4, 4x20-in.	26 15
" No. 4, 5x22-in.....	42 25
" No. 4, 6x22-in.....	47 20
Pruning.	
Atkins No. 20, 12-in.....	7 70
" No. 10, 16-in.....	16 50
Disston's No. 20.....	18 75
Wood.	
Atkins No. 202.....	3 50
" No. 212.....	10 05
" No. 905.....	15 65
" No. 1509.....	18 40
Disston's No. 111, 30-in.	22 20
" No. 111, 32-in.....	22 75
" No. 47, 30-in.....	30 25
" No. 47, 32-in.....	30 80
Star .....	SCISSORS.....60%
SCOOPS.	
Hubbard Western Pattern Riveted.	
Size A B C D	
1... \$16 75 16 00 15 25 14 45	
4... 17 85 17 10 16 35 15 60	
6... 18 65 17 85 17 10 16 35	
SCRAPERS.	
Box.	
Triangular, No. 6 per doz.	\$6 25
Road.	
Cubic ft. .... 7 5 3	
With runners, ea. \$7 00	6 50 6 20
SCREEN DOOR HINGES.	
Cast Iron .....	gross \$12 00
Steel .....	" 9 50
SCREWS.	
Bench.	
Iron, ins. 1 1 1/4 1 1/2	
\$6 22 7 57 9 45 12 20	
Wood, white maple, per doz.	6 00
Hand—Wood .....	50%
Hand Ball .....	22%
Jack .....	30%
Lag or Coach—all sizes, gimlet	
pointed .....	60%
Saw—Centennial.	
Nos. .... 1 2 3 4	
Per doz.....	47c 55c 75c 90c
Wood.	
F. H. Bright .....	77 1/2-80%
R. H. Blued .....	75-80%
F. H. Jap'd .....	75-80%
F. H. Brass .....	73 1/2-80%
R. H. Brass .....	70-80%
SOYTHES.	
Clipper, Grass.....	per doz. \$12 50
Honest Dutchman..	" 12 00

SNAPS.	
Nail.	
Square head.....per doz.	1 34
Cup point, knurled ..	1 75
RIVET.	
Farmers' .....	per doz. 2 50
Tinners' 3-4 .....	5 75
" 00-0 .....	8 75
SAW.	
Atkins No. 10.....per doz.	\$3 80
" No. 12.....	6 20
Disston's Monarch ..	9 90
" No. 11 .....	12 20
Leach's .....	80
Nash's Hand .....	2 15
Nash's X-cut .....	4 20
Stillman's Lever.....	1 20
Stillman's X-cut.....	3 50
Whiting Pattern, ..	
No. 21 .....	7 50
Eccentric Anvil, ..	
Hand No. 395, ..	
N. P. Morrill Pat-	
tern .....	14 50
SHARPENERS, SKATE.	
Diamond .....	per doz. \$1 60
Perfect .....	1 20
SHEARS	
Nickel Plated, Straight, 6"	Per Doz. \$12 90
" " " 7"	14 25
" " " 8"	16 20
Japanned, Straight ....6"	11 00
" " " 7"	12 40
" " " 8"	13 80
SHEAVES, SLIDING DOOR.	
Common.	2 4 5
Per set .....	\$1 40 1 75 2 40
Hatfield's.	
Per set \$1 80 2 10 2 75 25	
SHELLERS, CORN.	
Union .....	per doz. \$0 75
SHIELDS.	
Expansion Bolt Shields.....	60%
SHINGLES.	
Per Square	
Zinc (Illinois) .....	\$15 00
SHOES.	
Conductor .....	60%
SHOT—See Ammunition.	
SHOVELS AND SPADES.	
Coal.	
Hubbard's	
No. A B C D	
1 \$16 00 15 10 14 45 13 70	
2 16 35 15 60 14 85 14 10	
3 16 75 16 00 15 25 14 45	
4 17 10 16 35 16 60 14 85	
Post Drains & Ditching.	
Hubbard's	
Size A B C	
14" .....	17 15 16 40 15 65
16" .....	17 50 16 75 16 00
18" .....	17 85 17 10 16 35
20" .....	18 20 17 45 16 70
22" .....	18 55 17 80 17 05
Snow.	
Hubbard Special,	
Long Handle .....	\$10 00
D-Handle .....	11 00
Sidewalk Scraper .....	6 50
Alaska Steel.	
D-Handle .....	per doz. \$3 50
Long Handle .....	" 3 00
SINKS.	
Cast Iron.	
Painted, 16x24 .....	Net
Enameled, White, 16x24...	"
Wrought Steel.	
Painted, 16x24 .....	"
SKATES.	
Per pair	
Key Clamp Rucker, Men's	
and Boys'—best steel	
runners, bright finish...	\$0 91
Same—nickel plated finish	1 12
Key Clamp Hockey, Men's	
and Boys'—polished cast	
steel runners .....	1 24
Children's Extension Bob..	55
Half-key Clamp Rucker—	
Women's and Girls'....	1 15
Half-key Clamp Hockey—	
Women's and Girls'....	1 51
Racers, aluminum finish,	
including shoes .....	9 00
Hockey, aluminum .....	9 00
Both same prices for men's and	
women's.	
Roller.	
Ball Bearing—Boys' .....	1 85
Ball Bearing—Girls' .....	1 95

SNAPS, HARNESS.	
Covered Spring .....	Add 30%
Judd's Pattern .....	Add \$3 1-6% to list
SNATHS.	
Double Ring, Bush.....	per doz. \$0 75
Patent Loop, Bush.....	" 10 00
Patent Loop, Grass.....	" 8 75
SNIPS, TINNERS'.	
Clover Leaf .....	40&10%
National .....	40&10%
Star .....	50%
Milcor .....	Net
SPRINGS, DOOR.	
Perfect.	
Nos. .... 2 3 4 5 6 7	
Per doz. 45c 50c 55c 65c 80c 90c	
Reliance.	
Light Medium Heavy	
Per doz.....	\$1 80 2 40 3 75
Torrey's .....	per doz. 1 65
SPRINKLERS, LAWN.	
Stearn's No. 1.....per doz.	\$11 50
SQUARES.	
Steel and Iron.....	Net
(Add for bluing, \$2.00 per doz. net)	
Mitre .....	"
Try .....	"
Try and Bevel.....	"
Try and Miter.....	"
Fox's .....	per doz. \$6 00
Winterbottom's .....	10%
SQUEEZERS, LEMON.	
Common Wood.....per doz.	\$0 70
Porcelain Lined, Wood ..	1 25
Boss, malleable iron ..	1 30
Iron frame pora	
bowl .....	1 00
Iron frame, glass ..	2 35
Little Giant, tin'd ..	4 00
Iron .....	4 00
Drum, japanned ...	2 50
Drum, nickel plated ..	4 50
STAPLES.	
Blind.	
Barbed .....	per lb. 21 @ 22c
Butter, Tub .....	" 16 @ 19c
Fence—	
Polished .....	per 100 lbs. \$5 45
Galvanized ....	" 6 15
Netting.	
Galvanized .....	per 100 lbs. 6 50
Wrought.	
Wrought Staples, Hasps and	
Staples, Hasps, Hooks and	
Staples, and Hooks and	
Staples .....	50&10%
Extra heavy .....	35%
STEELYARD.	
Discount 25%.	
STONES.	
Axe.	
Hindustan .....	per lb. New Nets
More Grit .....	"
Washita .....	"
Emery.	
No. 128.....per doz. New Nets	
Oil—Mounted.	
Arkansas Hard	
No. 7.....per doz. New Nets	
Arkansas Soft ..	"
Washita No. 717 ..	"
Oil—Unmounted.	
Arkansas Hard per lb. New Nets	
Arkansas Soft..	"
Lilly White.....	"
Queer Creek.....	"
Washita .....	"
Seythe.	
Black Diamond per gro. New Nets	
Crescent .....	"
Green Mountain ..	"
Lamelle .....	"
Extra Quinne-	
bog .....	"
Red End .....	"
STOPS, BENCH.	
No. 10 Morrill pat-	
tern .....	per doz. \$11 00
No. 11 Stearns pat-	
tern .....	10 00
No. 15 Smith pattern ..	7 00
STOPPERS, FLUE.	
Common .....	per doz. \$1 10
Gem, flat, No. 3....	" 1 00
Gem, No. 1.....	" 1 10
STRAIPS.	
Skate .....	per doz. 55c&1 20



## STRETCHERS.

Carpet.	
Bullard's .....	per doz. \$3 90
Excelsior .....	" 5 25
Malleable Iron....	" 70
Perfection .....	" 6 80
King .....	" 4 50

## Wire.

O. S. Elwood, No. 1 per doz. Nets	
O. S. Elwood, No. 2	

## SWIVELS.

Malleable Iron .....	per lb. \$0 10
Wrought Steel .....	per gro. 4 50

## TACKS.

Sill Posters' 6-oz., 25-lb. boxes.	
per lb. ....	15c
Upholsters' 6-oz., 25-lb. boxes, per lb. ....	15½c

## TAPES, MEASURING.

Asses' Skin .....	List & 40%
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## THERMOMETERS.

Tin Case.....	per doz. 80c & \$1 25
Wood Back....	" \$2 00 & 12 00
Glass.....	" 12 00

## TIES.

Sale.	
Single Loop, carload lots .....	75 & 7%
Single Loop, less than car lots .....	70 & 15%

## TOOLS, SAW.

Disston's Universal.....	10%
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## TRAPS.

Game with Chains.	Per doz.
Victor No. 1.....	\$2 01
Oneida Jump No. 1.....	2 75
Newhouse No. 1.....	5 62

Mouse and Rat.	List per gross.
Sure Catch Mouse Traps..	\$ 3 70
Vim Mouse Traps.....	3 70
Short Stop Mouse Traps..	3 20
Wood Choker Mouse Traps, 4 hole.....	17 00
Sure Catch Rat Traps....	16 00
Vim Rat Traps.....	16 00
Short Stop Rat Trap.....	15 00
Dead Easy Rat Traps....	17 00
Star Rat Traps.....	50 00
Erie .....	54 00
Packed in One Bushel Band Stave Baskets.	

Sure Catch Mouse Traps (360 Traps) .....	\$ 9 20
Short Stop Mouse Traps (360 Traps) .....	5 00
Sure Catch Rat Traps (54 Traps) .....	6 00
Short Stop Rat Traps (54 Traps) .....	5 60
Assorted Mouse and Rat Traps.	
Sure Catch (316 Mouse Traps and 26 Rat Traps) ..	\$8 50
Short Stop (316 Mouse Traps and 26 Rat Traps) ..	7 50

## TROWELS.

Cement.	
Atkins No. 6.....	19 50
" No. 9.....	25 50
Disston's .....	30%

## TRUCKS.

Bag .....	each \$3 75
Warehouse or store, No. 1, each .....	\$24 50
No. 2, " .....	22 50

## TUBS, WASH.

Standard, Wood.	Ex.
Nos. .... 3 2 1 large	
Per doz. \$9 50 11 25 12 75 15 50	

Galvanized.	
No. .... 1 2 3	
Per doz. .... 13 75 15 95 18 60	

## TWIN.

White Cotton.	
Eureka, 4-ply.....	per lb. 30c
Jute.	
3-ply and 6-ply Bale Lots.....	22½c

## VALLEY.

Formed Valley Galvanized Steel .....	60-5%
Milcor .....	Net

## VISES.

No. 700, Hand.	
Inches .... 4½ 5 5½	
Doz. .... \$11 15 13 00 14 85	
No. 701, In. .... 4 5 6	
Doz. .... \$11 15 13 00 16 70	
No. 1, Genuine Wentworth, Noiseless Saw.....	per doz. 15 00
No. 2, Genuine Wentworth, Noiseless Saw.....	per doz. 23 50
No. 3, Genuine Wentworth, Noiseless Saw.....	per doz. 20 00
No. 500, All Steel Folding Saw .....	per doz. 16 00

## WASHERS.

Standard O. G. cast iron, per lb. ....	3½c
Wrought steel in 5-lb. boxes, per lb.:	
In. .... 3/16 ¼ 5/16 ¾ 1	
15c 14c 12c 11c 10c	
¾c 9c 8c 7c	

## WEDGES.

Ax. ....	per doz. Nets
Galling .....	per lb. Nets
Saw .....	per lb. 3½

## WEANERS.

Fuller's, per doz. \$2 00 to \$2 50	
Tyler's Safety, per doz. ....	1 85 to 2 40
Carroll's, per doz. 3 00 to 3 75	
Hosier, per doz. 3 50 to 4 60	
Shaw Perfected..	3 00 to 3 75

## WEIGHTS.

Hitching .....	per lb. Nets
Sash—f. o. b. Chicago.	
Ton lots, per ton.....	\$40 00
Smaller lots, per ton....	42 50

## WHEEL BARROWS.

Common Wood Tray.....	\$3 00
Steel Tray .....	4 50
Angle leg, garden.....	5 75

## WHEELS.

Carborundum .....	50%
Emery .....	60%
Well, Ins. .... 8 10 12	
Per doz. .... \$5 50 7 25 8 50	
12-in. heavy holisting, per doz. ....	\$25 00

## WIRE.

Plain annealed wire, No. 8 per 100 lbs. ....	\$3 45
Galvanized barb wire, per 100 lbs. ....	4 15
Wire cloth—black painted, 12-mesh, per 100 sq. ft. ....	2 50
Cattle Wire—galvanized catch weight spool, per 100 lbs. ....	4 15
Galvanized Hog wire, 30 rod spool, per spool.....	2 85
Galvanized plain wire, No. 8, per 100 lbs. ....	4 00

## WOOD FACES.

50% off list.

## WRENCHES.

Coes Steel Handle, 6-inch.....	30%
" " " 8- " .....	30%
" " " 10- " .....	30%
" " " 12- " .....	30%
Coes Knife-Handle, 6- " .....	30%
" " " 8- " .....	30%
" " " 10- " .....	30%
" " " 12- " .....	30%
Coes All Patterns.....	30%
Bemis & Call's:	
Adjustable S, 10% Adjustable S Pipe, 10%; Briggs' pattern .....	30%
Combination Bright .....	25%
Steel Handle Nut.....	30%
Combination Black .....	25 & 5%
Merrick Pattern .....	30%
Knife Handle Pattern.	
No. 48, Screw Wrench, List plus .....	30%
No. 60, Steel Handle.....	30%

## WRINGERS.

No. 790, Guarantee, per doz. \$60 00	
No. 770, Bicycle ..	55 00
No. 670, Domestic ..	51 00
No. 110, Brighton ..	45 00
No. 750, Guarantee..	60 00
No. 740, Bicycle ..	55 00
No. 22, Pioneer ..	42 50
No. 2, Superb ..	30 00

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Bertsch & Co.,  
Cambridge City, Ind.  
Dreis & Krump Mfg. Co.,  
Chicago, Ill.  
Hemp & Co., St. Louis, Mo.  
Kniedler, Frederick J.,  
Philadelphia, Pa.  
Maplewood Machinery Co.,  
Chicago, Ill.  
Marshalltown Mfg. Co.,  
Marshalltown, Iowa  
Whitney Mfg. Co., W. A.,  
Rockford, Ill.

**Mailing Lists.**  
Ross-Gould, St. Louis, Mo.

**Metals—Perforated.**  
Harrington & King Perforating  
Co.,  
Chicago, Ill.

**Miters.**  
Friedley-Voshardt Co.,  
Chicago, Ill.

**Nails—Slatting.**  
Hussey & Co., C. G.,  
Pittsburgh, Pa.

**Nails—Wire.**  
American Steel & Wire Co.,  
Chicago, Ill.

**Ornaments—Sheet Metal.**  
Friedley-Voshardt Co.,  
Chicago, Ill.  
Gerock Bros. Mfg. Co.,  
St. Louis, Mo.

**Patterns—Furnace and Stove.**  
Cleveland Castings Pattern Co.,  
Cleveland, Ohio  
Quincy Pattern Co., Quincy, Ill.  
Shaw & Son Co., The Geo. E.,  
Cleveland, Ohio  
Taft Metal Pattern & Mfg. Co.,  
Cleveland, Ohio  
Vedder Pattern Works,  
Troy, N. Y.

**Pipe and Fittings—Furnace.**  
Carr Supply Co., Chicago, Ill.  
Excelsior Steel Furnace Co.,  
Chicago, Ill.  
Henry Furnace & Fdy. Co.,  
Cleveland, Ohio  
Lamneck Co., W. E.,  
Columbus, Ohio  
Meyer & Bro. Co., F., Peoria, Ill.  
Michigan Safety Furnace Pipe  
Co.,  
Detroit, Mich.  
Osborn Co., The J. M. & L. A.,  
Cleveland, Ohio.  
Standard Furnace & Supply Co.,  
Omaha, Neb.

**Pipe and Fittings—Stove.**  
Hemp & Co., St. Louis, Mo.  
Meyer & Bro. Co., F., Peoria, Ill.  
Sullivan-Geiger Co.,  
Indianapolis, Ind.

**Pipe—Conductor.**  
Berger Bros. Co.,  
Philadelphia, Pa.  
Burton Co., W. J., Detroit, Mich.  
Clark-Smith Hdw. Co., Peoria, Ill.  
Dieckmann Co., Ferdinand,  
Cincinnati, Ohio  
Friedley-Voshardt Co.,  
Chicago, Ill.

Hussey & Co., C. G.,  
Pittsburgh, Pa.  
Lupton's Sons Co., David,  
Philadelphia, Pa.  
Milwaukee Corrugating Co.,  
Milwaukee, Wis.

**Polish—Metal and Stove.**  
Black Silk Stove Polish Co.,  
Sterling, Ill.

**Posts—Steel Fence.**  
American Steel & Wire Co.,  
Chicago, Ill.

**Punches.**  
Bertsch & Co.,  
Cambridge City, Ind.  
Whitney Mfg. Co., W. A.,  
Rockford, Ill.  
Whitney Metal Tool Co.,  
Rockford, Ill.

**Punches—Combination Bench and Hand.**  
Parker Supply Co.,  
New York, N. Y.

**Punches—Hand.**  
Parker Supply Co.,  
New York, N. Y.

**Quadrants—Damper.**  
Parker Supply Co.,  
New York, N. Y.

**Ranges.**  
Thatcher Furnace Co.,  
Chicago, Ill.

**Ranges—Combination Gas & Coal.**  
Cooperative Fdy. Co.,  
Rochester, N. Y.  
Malleable Iron Range Co.,  
Beaver Dam, Wis.  
Quick Meal Stove Co.,  
St. Louis, Mo.

**Ranges—Gas.**  
Dangler Stove Co., Cleveland, O.  
Quick Meal Stove Co.,  
St. Louis, Mo.

**Rasps.**  
Heller Bros., Newark, N. J.

**Register Shields.**  
Hall-Neal Furnace Co.,  
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